

158219

From: Mertz, Prema  
Sent: Tuesday, July 05, 2005 2:37 PM  
To: STIC-Biotech/ChemLib  
Subject: 10/751,242

Please search SEQ ID NO:1-2 with protein databases.

Thanks.

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4D81 Remsen Bldg Mailbox 4C70  
US Patent & Trademark Office  
Tel # (571) 272-0876  
FAX # (571) 273-0876

CRFE

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## STAFF USE ONLY

Searcher: \_\_\_\_\_  
Searcher Phone: 2-\_\_\_\_\_  
Date Searcher Picked up: \_\_\_\_\_  
Date Completed: \_\_\_\_\_  
Searcher Prep/Rev. Time: \_\_\_\_\_  
Online Time: \_\_\_\_\_

\*\*\*\*\*

## Type of Search

NA#: \_\_\_\_\_ AA#: \_\_\_\_\_  
Interference: \_\_\_\_\_ SPDI: \_\_\_\_\_  
S/L: \_\_\_\_\_ Oligomer: \_\_\_\_\_  
Encode/Transl: \_\_\_\_\_  
Structure#: \_\_\_\_\_ Text: \_\_\_\_\_  
Inventor: \_\_\_\_\_ Litigation: \_\_\_\_\_

\*\*\*\*\*

## Vendors and cost where applicable

STN: \_\_\_\_\_  
DIALOG: \_\_\_\_\_  
QUESTEL/ORBIT: \_\_\_\_\_  
LEXIS/NEXIS: \_\_\_\_\_  
SEQUENCE SYSTEM: \_\_\_\_\_  
WWW/Internet: \_\_\_\_\_  
Other(Specify): \_\_\_\_\_

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 9, 2005, 12:25:44 ; Search time 110.682 Seconds

(without alignments)  
805.025 Million cell updates/sec

Title: US-10-751-242-1

Perfect score: 896  
Sequence: 1 TPLGPASSLPQSEFLKCLEQ.....SHLQSLFVSYRVLRLAQP 174

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-Processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : UniProt\_03:\*  
1: uniprot\_sprot:\*  
2: uniprot\_trembl:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	896	100.0	200	Q8N4W3	Q8N4W3 homo sapien
2	884.5	98.7	207	CSF3_HUMAN	P09919 homo sapien
3	744	83.0	194	CSF3_FELCA	O02708 felis silve
4	744	83.0	195	O9GJY0	O9GJY0 felis silve
5	738	82.4	174	CSF3_SHEEP	Q28746 ovis aries
6	734	81.9	175	CSF3_CANFA	P35833 canis famli
7	727	81.1	195	CSF3_BOVIN	P35833 bos taurus
8	702	78.3	195	CSF3_PIG	O02837 sus scrofa
9	641	71.5	208	CSF3_MOUSE	P09920 mus musculu
10	634	70.8	214	P97712	P97712 rattus norv
11	511	57.0	127	Q8MKE0	Q8MKE0 equus cabal
12	304	33.9	201	MGF_CHICK	P13854 gallus gall
13	111	12.4	212	O9OY10	O9OY10 gallus gall
14	110.5	12.3	241	Q8M755	Q8M755 sus scrofa
15	108	12.1	208	O9XTR80	O9XTR80 delphinape
16	106.5	11.9	212	IL6_PIG	P26893 sus scrofa
17	101	11.3	205	IL6_ORCOR	Q28747 orcinus orc
18	100	11.2	208	IL6_HORSE	Q95181 equus cabal
19	96	10.7	189	O6N282	O6N282 homo sapien
20	95	10.6	208	O9H2A5	O9H2A5 homo sapien
21	94.5	10.5	222	IL6_FELCA	P41683 felis silve
22	94.5	10.5	222	O8D706	O8D706 vibrio vuln
23	94	10.5	345	O9KTL6	O9KTL6 vibrio chol
24	93	10.4	189	O9NPF7	O9NPF7 homo sapien
25	91	10.2	214	O6N280	O6N280 homo sapien
26	89.5	10.0	214	O8MKE5	O8MKE5 sus scrofa
27	89.5	10.0	2175	HMCI_DROME	P10180 drosophila
28	88.5	9.9	666	O9A523	O9A523 callobacter
29	88.5	9.9	786	O91019	O91019 pseudomonas
30	88.5	9.9	1931	O8R0Y3	O8R0Y3 stigmatella
31	86	9.6	208	IL6_BOVIN	P26892 bos taurus

32	86	9.6	502	2	Q34008	Q34008 beta vulgar
33	86	9.6	788	2	O8CF87	O8CF87 mus musculu
34	86	9.6	850	2	O7TQ21	O7TQ21 mus musculu
35	86	9.6	851	2	O8CF88	O8CF88 mus musculu
36	86	9.6	852	2	O811T9	O811T9 mus musculu
37	85.5	9.5	211	2	O85W7	O85W7 camelus bac
38	85.5	9.5	1288	2	O8LOR8	O8LOR8 oryza sativ
39	85	9.5	193	2	O9N2H9	O9N2H9 sus scrofa
40	85	9.5	208	1	O6V919	O6V919 bubalus bub
41	84.5	9.4	209	1	IL6_PHOVI	O28819 phoca vitul
42	84.5	9.4	211	1	IL6_LAMGL	O85X6 lama glama
43	84.5	9.4	455	2	O7MDW7	O7MDW7 vibrio vuln
44	84	9.4	175	2	O9TTH4	O9TTH4 aotus nigri
45	84	9.4	208	1	IL6_CAPHI	Q28319 capra hircu

## ALIGNMENTS

RESULT 1  
Q8N4W3 PRELIMINARY; PRT; 200 AA.  
AC Q8N4W3;  
DT 01-OCT-2002 (TrEMBLrel. 22, Created)  
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)  
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)  
DE Colony stimulating factor 3, isoform C.  
GN Name=CSF3;  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OC NCBI\_Taxid=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Skin;  
RX MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;  
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,  
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
RA Scapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
RA Brownstein M.J., Usetin T.B., Toshiyuki S., Carninci P., Prange C.,  
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullaly S.J.,  
RA Bosak S.A., McGowan P.J., McKernan K.D., Malek J.A., Gunaratne P.H.,  
RA Richards S., Morley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
RA Fahey J., Helton E., Kettelman M., Madan A., Rodriguez S., Sanchez A.,  
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,  
RA Krzywinski M.I., Skalska U., Smalish D.E., Scherch A., Schein J.E.,  
RA Jones S.J., Marra M.A.,  
RT "Generation and initial analysis of more than 15,000 full-length human  
and mouse cDNA sequences.";  
RT Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).  
RN [2]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Skin;  
RA Strausberg R.L.  
RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.  
DR EMBL; BC033245; AAH3245.1; -  
DR HSSP; P09919; IGNC.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005125; F:cytokine activity; IEA.  
DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.  
DR GO; GO:0006955; P:immune response; IEA.  
DR InterPro; IPR009079; 4 helix cytokine.  
DR InterPro; IPR003529; GCSF MGF.  
DR InterPro; IPR003574; Interleukin\_6.  
DR Pfam; PF00489; IL6; 1.  
DR PRINTS; PR00433; IL6GCSFMGF.

DR PRINTS; PR00434; INTERLEUKIN6.  
 DR Prodom; PD00388; GCSF MGF; 1.  
 DR Prodom; PD00388; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR SEQUENCE . 200 AA; 21543 MW; 8648AA5B329A96C CRC64;  
 SO  
 Query Match 100.0%; Score 896; DB 2; Length 200;  
 Best Local Similarity 100.0%; Pred. No. 5.2e-74;  
 Matches 174; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 1 TPLGPASLPSFLLKLEQVRIKIQDGAALQEKLCATYKCHPELVILGHSLGIPWAP 60  
 DB 27 TPLGPASLPSFLLKLEQVRIKIQDGAALQEKLCATYKCHPELVILGHSLGIPWAP 86  
 QY 61 LSSCPQALQAGLSQLHSLFLYQGLLQALLEGISPELPLDTLQDVADPATTWQQ 120  
 DB 87 LSSCPQALQAGLSQLHSLFLYQGLLQALLEGISPELPLDTLQDVADPATTWQQ 146  
 QY 121 MEELGMAPALQPTQGAMPAPAPAPAPAPAPAPAPAPAPAPAPAPAPAPAPAP 174  
 DB 147 MEELGMAPALQPTQGAMPAPAPAPAPAPAPAPAPAPAPAPAPAPAPAPAPAP 200  
 RESULT 2  
 CSF3\_HUMAN STANDARD; PRT; 207 AA.  
 AC P03919;  
 DT 01-MAR-1989 (Rel. 10, Created)  
 DT 01-MAR-1989 (Rel. 10, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF) (Pluripolietin)  
 DE (Filgrastim) (Lenograstim).  
 GN Name=CSF3;  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.  
 OX NCBI\_TaxID=9606;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=86118679; PubMed=3484805;  
 RA Nagata S., Teuchiya M., Asano S., Kaziro Y., Yamazaki T., Yamamoto O.,  
 RA Hirata Y., Kubota N., Oheda M., Nomura H., Ono M.;  
 RT "Molecular cloning and expression of cDNA for human granulocyte  
 RT colony-stimulating factor.";  
 RL Nature 319:415-418 (1986).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=86220137; PubMed=2423327;  
 RA Nagata S., Teuchiya M., Asano S., Yamamoto O., Hirata Y., Kubota N.,  
 RA Oheda M., Nomura H., Yamazaki T.;  
 RT "The chromosomal gene structure and two mRNAs for human granulocyte  
 RT colony-stimulating factor.";  
 RL EMBO J. 5:575-581 (1986).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=87196936; PubMed=3494801;  
 RA Devlin J.J., Devlin P.E., Wyambo K., Lilly M.B., Rado T.A.,  
 RA Warren M.K.;  
 RT "Expression of granulocyte colony-stimulating factor by human cell  
 RT lines.";  
 RL J. Leukoc. Biol. 41:302-306 (1987).  
 RN [4]  
 RP SEQUENCE FROM N.A. AND VARIANTS MET-157 AND THR-174.  
 RA Rieder M.J., Carlington D.P., Chung M.-W., Lee K.L., Poel C.L., Yi Q.,  
 RA Nickerson D.A.;  
 RT "Seattlesp. NHBLI H6682 program for genomic applications, UW-  
 RT FHRC, Seattle, WA (URL: <http://gsa.gs.washington.edu>).";  
 RL Submitted (JUN-2001) to the EMBL/Genbank/DBJ databases.  
 RN [5]  
 RP SEQUENCE OF 19-207 FROM N.A.  
 RX MEDLINE=86151684; PubMed=2420009;  
 RA Souza L.M., Boone T.C., Gabrilove J., Lai P.H., Zeebo K.M.,

RA Murdock D.C., Chazin V.R., Brzezewski J., Lu H., Chen K.K.,  
 RA Barendt J., Platzer E., Moore M.A.S., Merkleman R., White K.;  
 RT "Recombinant human granulocyte colony-stimulating factor: effects on  
 RT normal and leukemic myeloid cells.";  
 RL Science 232:61-66 (1986).  
 RN [6]  
 RP CARBOHYDRATE-LINKAGE SITE.  
 RX MEDLINE=93293942; PubMed=7685769;  
 RA Clogston C.L., Hu S., Boone T.C., Lu H.S.;  
 RT "Glycosidase digestion, electrophoresis and chromatographic analysis  
 RT of recombinant human granulocyte colony-stimulating factor glycoforms  
 RT produced in Chinese hamster ovary cells.";  
 RL J. Chromatogr. A 637:55-62 (1993).  
 RN [7]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=93106200; PubMed=1281794; DOI=10.1016/0014-5793(92)81521-W;  
 RA Zink T., Ross A., Ambrosius D., Rudolph R., Holak T.A.;  
 RT "Secondary structure of human granulocyte colony-stimulating factor  
 RT derived from NMR spectroscopy.";  
 RL FEBS Lett. 314:435-439 (1992).  
 RN [8]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=94304859; PubMed=7518249;  
 RA Zink T., Ross A., Luers K., Gieslar C., Rudolph R., Holak T.A.;  
 RT "Structure and dynamics of the human granulocyte colony-stimulating  
 RT factor determined by NMR spectroscopy. Loop mobility in a four-helix-  
 RT bundle protein.";  
 RL Biochemistry 33:8453-8463 (1994).  
 RN [9]  
 RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).  
 RX MEDLINE=93281718; PubMed=7685117;  
 RA Hill C.P., Oestlund T.D., Eisenberg D.;  
 RT "The structure of granulocyte-colony-stimulating factor and its  
 RT relationship to other growth factors.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 90:5167-5171 (1993).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 CC cytokines that act in hematopoiesis by controlling the production,  
 CC differentiation, and function of 2 related white cell populations  
 CC of the blood, the granulocytes and the monocytes/macrophages. This  
 CC CSF induces granulocytes.  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- ALTERNATIVE PRODUCTS:  
 CC Even-Alternative splicing; Named isoforms=2;  
 CC Name-long:  
 CC IsoId=P09919-1; Sequence=displayed;  
 CC Name-short;  
 CC IsoId=P09919-2; Sequence=VSP\_002673;  
 CC -1- PTM: O-glycan consists of Gal-GalNAc disaccharide which can be  
 CC modified with up to two sialic acid residues (done in  
 CC recombinantly expressed G-CSF from CHO cells).  
 CC -1- PHARMACEUTICAL: Available under the names Neupogen or Granulokine  
 CC (Amgen/Roche) and Granocyte (Rhône-Poulenc). Used to treat  
 CC neutropenia (a disorder characterized by an extremely low number  
 CC of neutrophils in blood).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
 CC -1- CAUTION: Ref.4 misquotes the gene name as "CSF1".  
 CC -1- DATABASE: NMB=Neupogen/Granulokine;  
 CC NOTE=Clinical information on Neupogen/Granulokine;  
 CC WWW="http://www.neupogen.com/".  
 CC  
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 CC or send an email to [license@sb-sib.ch](mailto:license@sb-sib.ch)).  
 CC -----  
 DR EMBL; X03438; CAA27168.1; -;  
 DR EMBL; M13008; AAA03056.1; -;  
 DR EMBL; X03656; CAA27291.1; -;  
 DR EMBL; X03655; CAA27290.1; -;

DR EMBL/AF388025; AAK62469.1; -  
 DR EMBL/M17706; AAA35882.1; -  
 DR PIR/A24573; A24573.  
 DR PIR/A25093; FQHUOL.  
 DR PDB/1C09; X-ray; A/C=30-207.  
 DR PDB/1GNC; NMR; @=30-207.  
 DR PDB/1PGR; X-ray; A/C/E/G=30-207.  
 DR PDB/1RHG; X-ray; A/B/C=31-207.  
 DR Genew/HGNC/2438; CSF3.  
 DR MIM/138970; -  
 DR GO/GO:0005615; C:extracellular space; TAS.  
 DR GO/GO:0005130; F:granulocyte colony-stimulating factor recep. .; TAS.  
 DR GO/GO:0007275; P:development; TAS.  
 DR GO/GO:0008284; P:positive regulation of cell proliferation; TAS.  
 DR InterPro/InterPro09079; 4 helix\_cytokine.  
 DR InterPro/InterPro03629; GCSF\_MGF.  
 DR InterPro/InterPro03573; IL6\_MGF\_GCSF.  
 DR Pfam/PF00489; IL6; 1.  
 DR PRINTS/PR00433; IL6GCSFMGF.  
 DR PRODOM/PD008388; GCSF\_MGF; 1.  
 DR SMART/SM0126; IL6; 1.  
 DR PROSITE/PS00254; INTERLEUKIN\_6; 1.  
 DR 3D-structure; Alternative splicing; Cytokine; Glycoprotein;  
 KW Growth factor; Pharmaceutical; Polymorphism; signal.  
 FT CHAIN 1 30  
 FT SIGNAL  
 FT DISULFID 31 207 Granulocyte colony-stimulating factor.  
 FT DISULFID 69 75  
 FT DISULFID 97 107  
 FT CARBOHYD 166 166 O-linked (GAINC. .) (By similarity).  
 FT VARSPLIC 66 68 Missing (in isoform short).  
 FT VARIANT 157 157 L->M (in dbSNP:2227329).  
 FT VARIANT 174 174 /FTID=VAR\_013073.  
 FT VARIANT 174 174 A->T (in dbSNP:2227330).  
 FT VARIANT 174 174 /FTID=VAR\_013074.  
 FT HELIX 41 65  
 FT HELIX 69 71  
 FT HELIX 77 86  
 FT TURN 87 88  
 FT HELIX 105 124  
 FT TURN 125 127  
 FT TURN 130 132  
 FT HELIX 133 156  
 FT TURN 157 158  
 FT HELIX 176 203  
 FT TURN 204 204  
 SQ SEQUENCE 207 AA; 22293 MW; 421F635EC776996 CRC64;  
 Query Match 98.7%; Score 884.5; DB 1; Length 207;  
 Best Local Similarity 98.3%; Pred. No. 6.1e-73;  
 Matches 174; Conservative 0; Mismatches 0; Indels 3; Gaps 1;  
 QY 1 TPLGASSLPSFLKCLEQVRKIQGDGAALOEK---CATYKLCHEPELVLLGHSIGIP 57  
 DB 31 TPLGASSLPSFLKCLEQVRKIQGDGAALOEKLVSECAITKLCHEPELVLLGHSIGIP 90  
 QY 58 WAPLSSCSQALQAGLSQHSGLFLYQGLQALLEGISPELGPITLDTLQADVADPATTI 117  
 DB 91 WAPLSSCSQALQAGLSQHSGLFLYQGLQALLEGISPELGPITLDTLQADVADPATTI 150  
 QY 118 WQWHEELMAPALOPTOGAMPAPAFASAFORRAGGIVVASHLOSFLVSVYRLRHAAOP 174  
 DB 151 WQWHEELMAPALOPTOGAMPAPAFASAFORRAGGIVVASHLOSFLVSVYRLRHAAOP 207  
 RESULT 3  
 CSF3\_FELCA  
 ID CSF3\_FELCA STANDARD; PRT; 194 AA.  
 AC 002708;  
 DT 30-MAY-2000 (Rel. 39; Created)  
 DT 30-MAY-2000 (Rel. 39; Last sequence update)  
 DT 05-JUL-2004 (Rel. 44; Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF) (Fragment).

GN Name=CSF3;  
 OS Felis silvestris catus (Cat).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.  
 CC NCBI\_TaxId=9685;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RC STRAIN=European shorthair; TISSUE=Lung;  
 RX MEDLINE=21389237; PubMed=11497496; DOI=10.1006/cyto.2001.0910;  
 RA Dunham S.P., Onions D.E.;  
 RT "Isolation, nucleotide sequence and expression of a cDNA encoding  
 RT feline granulocyte colony-stimulating factor";  
 RL Cytokine 14:347-351(2001).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 CC cytokines that act in hematopoiesis by controlling the production,  
 CC differentiation, and function of 2 related white cell populations  
 CC of the blood, the granulocytes and the monocytes-macrophages. This  
 CC CSF induces granulocytes (by similarity).  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- PTM: O-glycosylated (By similarity).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
 CC -----  
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 CC -----  
 DR EMBL/Y08558; CAA69853.1; -  
 DR PIR/T09255; T09255.  
 DR HSSP/P09919; IRHG.  
 DR InterPro/InterPro09079; 4 helix\_cytokine.  
 DR InterPro/InterPro03629; GCSF\_MGF.  
 DR InterPro/InterPro03573; IL6\_MGF\_GCSF.  
 DR InterPro/InterPro03574; Interleukin\_6.  
 DR Pfam/PF00489; IL6; 1.  
 DR PRINTS/PR00433; IL6GCSFMGF.  
 DR PRINTS/PR00434; INTERLEUKIN\_6.  
 DR PRODOM/PD008388; GCSF\_MGF; 1.  
 DR SMART/SM0126; IL6; 1.  
 DR PROSITE/PS00254; INTERLEUKIN\_6; 1.  
 DR Cytokine; Glycoprotein; Growth factor; signal.  
 KW Cytokine; Glycoprotein; Growth factor; signal.  
 FT CHAIN 1 20  
 FT SIGNAL  
 FT DISULFID 21 194 Granulocyte colony-stimulating factor.  
 FT DISULFID 56 62 By similarity.  
 FT CARBOHYD 84 94 O-linked (GAINC. .) (By similarity).  
 FT VARSPLIC 153 153  
 SQ SEQUENCE 194 AA; 21154 MW; F72B7AB3D8E7385E CRC64;  
 Query Match 83.0%; Score 744; DB 1; Length 194;  
 Best Local Similarity 81.0%; Pred. No. 4.2e-60;  
 Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;  
 QY 1 TPLGASSLPSFLKCLEQVRKIQGDGAALOEK---CATYKLCHEPELVLLGHSIGIP 60  
 DB 21 TPLGFTSLPSFLKCLEQVRKIQGDGAALOEKCAHKKCHEPELVLLGHSIGIP 80  
 QY 61 LSSCSQALQAGLSQHSGLFLYQGLQALLEGISPELGPITLDTLQADVADPATTIWQ 120  
 DB 81 LSSCSQALQAGLSQHSGLFLYQGLQALLEGISPELGPITLDTLQADVADPATTIWQ 140  
 QY 121 MEELGMAPALOPTOGAMPAPAFASAFORRAGGIVVASHLOSFLVSVYRLRHAAOP 174  
 DB 141 MEELGMAPALOPTOGAMPAPAFASAFORRAGGIVVASHLOSFLVSVYRLRHAAOP 194  
 RESULT 4  
 ID 09GJTO PRELIMINARY; PRT; 195 AA.  
 AC 09GJTO  
 DT 09GJTO

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AC O9GJ0;
DT 01-MAR-2001 (TRENBLrel. 16, Created)
DT 01-MAR-2001 (TRENBLrel. 16, Last sequence update)
DT 05-JUL-2004 (TRENBLrel. 27, Last annotation update)
DB Granulocyte colony-stimulating factor precursor.
GN Name=G-CSF;
OS Felis silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.
OX NCBI_TaxID=9685;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21531548; PubMed=11675019; DOI=10.1016/S0378-1119(01)00575-3;
RA Yamamoto A., Iwata A., Tsuchiya K., Katsumata A., Oishi K., Satto T.,
RA Tsujimoto H., Hasegawa A., Ueda S.;
RT "Molecular cloning and expression of the cDNA encoding feline
RT granulocyte colony-stimulating factor.";
RL Gene 274:263-269(2001).
DR EMBL; AB042552; BAB17789.1; -
DR EMBL; AB042553; BAB17757.1; -
DR HSSP; P35834; 1BGF.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005125; F:cytokine activity; IEA.
DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR SIGNAL.
KW SIGNAL.
FT SIGNAL.
SQ SEQUENCE 195 AA; 21255 MW; 5440682909412FCF CRC64;

Query Match 83.0%; Score 744; DB 2; Length 195;
Best Local Similarity 81.0%; Pred. No. 4.2e-60;
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 1 TPLGASSTLPSOFLKCLEQVRKIQDGAALQEKLCATYKLCHEPELVTLGSHGIPWAP 60
DB 22 TPLGTSSTLPSOFLKCLEQVRKIQDGAALQEKLCATYKLCHEPELVTLGSHGIPWAP 81
QY 61 LSSCPQALQAGCLSQLHSGFLFYQGLQLQALLEGISPELGPTLDTLQDVADPATTIMQ 120
DB 82 LSSCSQALQAGCLSQLHSGFLFYQGLQLQALLEGISPELGPTLDTLQDVADPATTIMQ 141
QY 121 MEBLGMAPLOPTGQAMPAPASAFORRAGGTVLVASHQSLFLEVSYRYLRLHQAOP 174
DB 142 MEDVGMAVAVPTQGTMTFTSAPFORRAGGTVLVASHQSLFLEVSYRYLRLHQAOP 195

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## RESULT 5

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CSF3_SHEEP STANDARD; PRT; 174 AA.
ID CSF3_SHEEP
AC Q28746;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Granulocyte colony-stimulating factor (G-CSF).
GN Name=CSF3;
OS Ovis aries (sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Ruminantia; Pecora; Bovidae;
OC Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=95102116; PubMed=7528579;

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RA O'Brien P.M., Seow H.F., Rothel J.S., Wood P.R.;
RT "Cloning and sequencing of an ovine granulocyte colony-stimulating
RT factor cDNA.";
RL DNA Seq. 4:339-342(1994).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes (By similarity).
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated (By similarity).
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC -----
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CC between the Swiss Institute of Bioinformatics and the EMBL outstation -
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CC or send an email to license@sib-sib.ch).
CC -----
DR EMBL; L07939; AAA68006.1; -
DR PIR; T10268; T10268.
DR HSSP; P09919; 1RHG.
DR InterPro; IPR009079; 4_helix_cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR SIGNAL.
KW Cytokine; Glycoprotein; Growth factor.
FT DISULFID 36 42 By similarity.
FT DISULFID 64 74 By similarity.
FT CARBOHYD 133 133 O-linked (GalNAc... (By similarity).
SQ SEQUENCE 174 AA; 18806 MW; BAA5A8F8D23ACDIE CRC64;

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## RESULT 6

```

CSF3_CANFA STANDARD; PRT; 175 AA.
ID CSF3_CANFA
AC P35834;
DT 01-JUN-1994 (Rel. 29, Created)
DT 01-JUN-1994 (Rel. 29, Last sequence update)
DT 25-OCT-2004 (Rel. 45, Last annotation update)
DE Granulocyte colony-stimulating factor (G-CSF).
GN Name=CSF3;
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
RX MEDLINE=94076341; PubMed=7504736;
RX Lovejoy B., Cascio D., Eisenberg D.;

```

RT	Crystal structure of canine and bovine granulocyte-colony-stimulating factor (G-CSF).";
RL	J. Mol. Biol. 234:640-653 (1993).
CC	- FUNCTION: Granulocyte/macrophage colony-stimulating factors are cytokines that act in hematopoiesis by controlling the production, differentiation, and function of 2 related white cell populations of the blood, the granulocytes and the monocytes-macrophages. This CSF induces granulocytes.
CC	- SUBUNIT: Monomer.
CC	- SUBCELLULAR LOCATION: Secreted.
CC	- PTM: O-glycosylated.
CC	- SIMILARITY: Belongs to the IL-6 superfamily.
DR	PDB: 1BGD; X-ray; @=1-175.
DR	PDB: 1BGE; X-ray; A/B=1-175.
DR	InterPro: IPR009079; 4_helix_cytokine.
DR	InterPro: IPR003579; GCSF_MGF.
DR	InterPro: IPR003573; IL6_MGF_GCSF.
DR	Pfam: PF00489; IL6; 1.
DR	PRINTS: PR00433; IL6GCSFMGF.
DR	ProDom: PD008388; GCSF_MGF; 1.
DR	SMART; SM00126; IL6; 1.
DR	PROSITE; PS00254; INTERLEUKIN_6; 1.
KW	3D-structure; Cytokine; Glycoprotein; Growth factor.
FT	DISULFID 37 43
FT	CARBOHYD 134 134
FT	STRAND 10 10
FT	HELIX 12 39
FT	HELIX 45 55
FT	TURN 56 56
FT	HELIX 63 65
FT	TURN 67 69
FT	HELIX 72 92
FT	TURN 93 95
FT	TURN 98 100
FT	HELIX 101 125
FT	TURN 126 126
FT	HELIX 144 171
FT	TURN 172 172
FT	STRAND 173 173
SEQ	SEQUENCE 175 AA; 18858 MW; 28C26B24990C6DB3 CRC64;
Query Match	81.9%; Score 734; DB 1; Length 175;
Best Local Similarity	80.9%; Pred. No. 3.1e-59;
Matches 140; Conservative 11; Mismatches 22; Indels 0; Gaps 0;	
QY	2 PLGPASLSPOSFLKLCLEOVRIKIQGDGAIOEKATVYLCPHEELVILGSHGIPML 61
DB	3 PLGPFGPLPQSLKLCLEQMRVVOADGRLQETLCATHOLCPHEELVILGSHLGIPOPL 62
QY	62 SSCPEQALQLAGCLSQLSHGFLVYQGLLQALAGISPELAPTLDTQLDVADEPATIWM 121
DB	63 SSCSCQALQMGCLAFQMSGLFLVYQGLQALAGISPELAPTLDTQLDPTPRINIKWM 122
QY	122 EELGAPALQPTGAMPAPAFASFORRAGGVIVASHIQSELEVSYRVLRLAQP 174
DB	123 EDLGAPAVPPTGTPAPFTSAFORRAGGVIVASNLQSELEVSYRVLRLAQP 175
RESULT 7	
CSF3_BOVIN	STANDARD; PRT; 195 AA.
ID	CSF3_BOVIN
AC	P35833; O9TV89;
DT	01-JUN-1994 (Rel. 29, Created)
DT	16-OCT-2001 (Rel. 40, Last sequence update)
DT	25-OCT-2004 (Rel. 45, Last annotation update)
DE	Granulocyte colony-stimulating factor precursor (G-CSF).
GN	Name=CSF3; Synonyms=GCSF;
OS	Bos taurus (Bovine).
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC	Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC	Bovinae; Bos.
NC	NCBI_TaxID=9913;

Query Match	Best Local Similarity	Score 727	DB 1	Length 195
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;	81.1%;	81.0%;	Pred. No. 1.5e-58;	
1	TPIGPASPQSTFLKCTLEQVRKIOGDGAALQEKICATKLGHPRETVLIGSIGPMP	60		
22	TPIGPASPQSTFLKCTLEQVRKIOGDGAALQEKICATKLGHPRETVLIGSIGPMP	81		

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Db      82 LSSSSSSLOUTSLNQLHGLFLYQGLLQALAGISPELAPLDTLQDVTDFATNTWLQ 141
Qy      121 MEELGMAPALOPTGAMPAPASAFORRAGGVLVASHLOSFEVSVRYLRHIAOP 174
Db      142 MEDGAPAPVOPPTGAMPFTSAFORRAGGVLVASHLOSFEVSVRYLRHIAEP 195

RESULT 8
CSF3_PIG STANDARD; PRT; 195 AA.
ID   CSF3_PIG 002837; 019180;
AC   002837; 019180; (Rel. 36, Created)
DT   15-JUL-1998 (Rel. 39, Last sequence update)
DT   30-MAY-2000 (Rel. 39, Last sequence update)
DE   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Granulocyte colony-stimulating factor precursor (G-CSF).
GN   Name=CSF3;
OS   Sus scrofa (Pig).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae; Sus.
OX   NCBI_TaxID=9623;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Kulmburg P.;
RL   Submitted (JAN-1997) to the EMBL/GenBank/DBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RA   Tissue=Liver;
RC   Glycerol S.E.; Sandeman R.M.; Strom A.D.G.;
RT   "Cloning of a cDNA and gene encoding porcine granulocyte-colony
RT   stimulating factor";
RT   Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.
CC   -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC   cytokines that act in hematopoiesis by controlling the production,
CC   differentiation, and function of 2 related white cell populations
CC   of the blood, the granulocytes and the monocytes-macrophages. This
CC   CSF induces granulocytes (By similarity).
CC   -1- SUBUNIT: Monomer.
CC   -1- SUBCELLULAR LOCATION: Secreted.
CC   -1- PTM: O-glycosylated (By similarity).
CC   -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC   -----
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CC   or send an email to license@isb-sib.ch).
CC   -----
DR   EMBL; Y10494; CAA71518.1; -
DR   EMBL; U68482; AAB70701.1; -
DR   EMBL; U68481; AAB70700.1; -
DR   HSSP; P09919; 1RHG.
DR   InterPro; IPR009079; 4_helix_cytokine.
DR   InterPro; IPR003629; GCSF_MGF.
DR   InterPro; IPR003573; IL6_MGF_GCSF.
DR   Pfam; PF00489; IL6; 1.
DR   PRINTS; PR00433; IL6GCSFMGF.
DR   ProDom; PD008388; GCSF_MGF_1.
DR   SMART; SM00126; IL6_1.
DR   SMART; PS00254; INTERLEUKIN_6; 1.
KW   Cytokine; Glycoprotein; Growth factor; Signal.
FT   CHAIN      1..21
FT   SIGNAL     1..21
FT   DISULFID   22..195
FT   DISULFID   57..63
FT   DISULFID   85..95
FT   CARBOHYD   154..154
FT   CONFLICT   123..123
FT   CONFLICT   123..123
SQ   SEQUENCE 195 AA; 21214 MW; 84787F20DB0A8A1C CAC64;

Query Match      78.3%; Score 702; DB 1; Length 195;
Best Local Similarity 79.2%; Pred. No. 3e-56;

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Matches 137; Conservative 11; Mismatches 25; Indels 0; Gaps 0;
Qy      2 PLGPASSLPSFLKLCLEQVRKTIQGDGALQEKLCATYKLCHEBELVTLGHSIGIIPWAPL 61
Db      23 PLSPASSLPQSLFKLCLEQVRKTIQADGAELEKLCATKLCHEBELVTLGHSIGLPPASL 82
Qy      62 SSCPSQALQAGCLSQHSLFLYQGLLQALAGISPELPGTLDLTQDVTDFATNTWQM 121
Db      83 SSCSSQALQTLGCLNQHGLVLYQGLLQALAGISPELAPLDTLQDVTDFATNTWLQ 142
Qy      122 BELGMAPALOPTGAMPAPASAFORRAGGVLVASHLOSFEVSVRYLRHIAOP 174
Db      143 EDLMAPASLPPTGVTPTSAFORRAGGVLVASHLOSFEVSVRYLRHIAEP 195

RESULT 9
CSF3_MOUSE STANDARD; PRT; 208 AA.
ID   CSF3_MOUSE 009920;
AC   009920;
DT   01-MAR-1989 (Rel. 10, Created)
DT   01-MAR-1989 (Rel. 10, Last sequence update)
DT   05-JUL-2004 (Rel. 44, Last annotation update)
DE   Granulocyte colony-stimulating factor precursor (G-CSF).
GN   Name=Csf3; Synonyms=Csf3g;
OS   Mus musculus (Mouse).
OC   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC   Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
OX   NCBI_TaxID=10090;
RN   [1]
RP   SEQUENCE FROM N.A.
RA   MEDLINE=87017003; Pubmed=3489940;
RX   Tsuchiya M., Asano S., Kaziro Y., Nagata S.;
RT   "Isolation and characterization of the cDNA for murine granulocyte
RT   colony-stimulating factor";
RT   Proc. Natl. Acad. Sci. U.S.A. 83:7633-7637(1986).
RN   [2]
RP   SEQUENCE FROM N.A.
RA   MEDLINE=87190474; Pubmed=3494605;
RX   Tsuchiya M., Kaziro Y., Nagata S.;
RT   "The chromosomal gene structure for murine granulocyte colony-
RT   stimulating factor";
RT   Eur. J. Biochem. 165:7-12(1987).
RN   [3]
RP   PARTIAL SEQUENCE.
RX   Pubmed=3501294;
RA   Simpson R.J., Nice E.C., Nicola N.A.;
RT   "Structural studies on the murine granulocyte colony-stimulating
RT   factor";
RT   Biol. Chem. Hoppe-Seyler 368:1327-1331(1987).
CC   -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC   cytokines that act in hematopoiesis by controlling the production,
CC   differentiation, and function of 2 related white cell populations
CC   of the blood, the granulocytes and the monocytes-macrophages. This
CC   CSF induces granulocytes.
CC   -1- SUBUNIT: Monomer.
CC   -1- SUBCELLULAR LOCATION: Secreted.
CC   -1- PTM: O-glycosylated (By similarity).
CC   -1- SIMILARITY: Belongs to the IL-6 superfamily.
CC   -----
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   -----
DR   EMBL; M13926; AAA37672.1; -
DR   EMBL; X05402; CAA28986.1; -
DR   PIR; A29536; A26496.
DR   HSSP; P09919; 1RHG.
DR   MGD; MGI:1339751; Csf3.
DR   InterPro; IPR009079; 4_helix_cytokine.

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DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR ProDom: PD008388; GCSF_MGF; 1.
DR ProDom: PD004356; Interleukin_6; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
KW Cytokine; Direct protein sequencing; Glycoprotein; Growth factor;
KW Signal.
FT CHAIN 1 30 Granulocyte colony-stimulating factor.
FT DISUFID 31 208 By similarity.
FT DISUFID 72 78 By similarity.
FT DISUFID 100 110 O-linked (GlcNAc...) (By similarity).
FT CARBOHYD 169 169
SQ SEQUENCE 208 AA; 22421 MW; 0BF3622135C906DB CRC64;

Query Match
Best local Similarity 71.5%; Score 641; DB 1; Length 208;
Matches 129; Conservative 9; Mismatches 32; Indels 0; Gaps 0;

QY 3 LGPSSLPPOSFLKLCLEQVARKIQDGAALQEKLCATYKLCHEPELVLLGSLGIPMAPLS 62
DB 39 LPPSLPLPSPFLKSLSEQVARKIQASGVLEQLCATYKLCHEPELVLLGSLGIPKASLS 98
QY 63 SCPSQALQAGCISQSLHSGFLFYQGLIQALEGISPELPTLDLTQDVADPATTIWOOME 122
DB 99 GCSQALQOQTCISQSLHSGFLFYQGLIQALSGISPALAPTLTDQDVANPATTIWOOME 158

QY 123 ELGMAPALOPTOGAMPAPAFASAFORRAGGVVASHLOSFLVSVRYVRLHLP 172
DB 159 SLGVAIPVQPTQSTMPITFSAFORRAGGVVLTYSLOSFLSTAHALHLP 208

RESULT 10
P97712 PRELIMINARY; PRT; 214 AA.
AC P97712;
DT 01-MAY-1997 (TrEMBLrel. 03, Created)
DT 01-MAY-1997 (TrEMBLrel. 03, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Granulocyte colony stimulating factor.
OS Rattus norvegicus (Rat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
OX NCBI_TaxID=10116;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=9707456; PubMed=8917083; DOI=10.1016/0378-1119(96)00131-X;
RA Han S.W., Ramash N., Osborne W.R.;
RT "Cloning and expression of the cDNA encoding rat granulocyte colony-
stimulating factor."
RL Gene 175:101-104(1996).
DR EMBL: U37101; AAC52915.1; -.
DR PIR: JCS043; JCS043.
DR HSSP: P09919; IIRG.
DR GO: GO:0005576; C:extracellular; IEA.
DR GO: GO:0005125; F:cytokine activity; IEA.
DR GO: GO:0008083; F:growth factor activity; IEA.
DR GO: GO:0006955; P:immune response; IEA.
DR InterPro: IPR009079; 4_helix_cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR ProDom: PD008388; GCSF_MGF; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 214 AA; 23659 MW; 29BB88B17B684C55 CRC64;

Query Match
Best local Similarity 70.8%; Score 634; DB 2; Length 214;
Matches 127; Conservative 10; Mismatches 35; Indels 0; Gaps 0;

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QY 3 LGPSSLPPOSFLKLCLEQVARKIQDGAALQEKLCATYKLCHEPELVLLGSLGIPMAPLS 62
DB 30 LPPSLPLPSPFLKSLSEQVARKIQARTELEQLCATYKLCHEPELVLLGSLGIPKASLS 89
QY 63 SCPSQALQAGCISQSLHSGFLFYQGLIQALEGISPELPTLDLTQDVADPATTIWOOME 122
DB 90 SCSSQALQOQTCISQSLHSGFLFYQGLIQALSGISSELPATLDMHLDVDPATTIWOOME 149

QY 123 ELGMAPALOPTOGAMPAPAFASAFORRAGGVVASHLOSFLVSVRYVRLHLP 174
DB 150 SLGVAIPVQPTQSTMPITFSAFORRAGGVVLTYSLOSFLSTAHALHLP 201

RESULT 11
QMKR0
ID QMKR0 PRELIMINARY; PRT; 127 AA.
AC QMKR0;
DT 01-OCT-2002 (TrEMBLrel. 22, Created)
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Granulocyte colony-stimulating factor.
GN Name=G-CSF;
OS Equus caballus (Horse).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
OX NCBI_TaxID=9796;
RN [1]
RP SEQUENCE FROM N.A.
RA Noronha L.B., Takafuji V.A., Sharova L.V., Crisman M.V., Howard R.D.;
RL Submitted (APR-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL: AF503365; AAM34205.1; -.
DR HSSP: P35833; IBCG.
DR GO: GO:0005576; C:extracellular; IEA.
DR GO: GO:0005125; F:cytokine activity; IEA.
DR GO: GO:0008083; F:growth factor activity; IEA.
DR GO: GO:0006955; P:immune response; IEA.
DR InterPro: IPR009079; 4_helix_cytokine.
DR InterPro: IPR003629; GCSF_MGF.
DR InterPro: IPR003573; IL6_MGF_GCSF.
DR Pfam: PF00489; IL6; 1.
DR PRINTS: PR00433; IL6GCSFMGF.
DR ProDom: PD008388; GCSF_MGF; 1.
DR SMART: SM00126; IL6; 1.
DR PROSITE: PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 127 AA; 13657 MW; 25559C2569802077 CRC64;

Query Match
Best local Similarity 57.0%; Score 511; DB 2; Length 127;
Matches 101; Conservative 9; Mismatches 17; Indels 0; Gaps 0;

QY 48 VLLGSLGIPMAPLSSCPQALQAGCISQSLHSGFLFYQGLIQALEGISPELPTLDLTQ 107
DB 1 KLLGSLGIPQPLSSCPQALQAGCISQSLHSGFLFYQGLIQALSGISSELPATLDMQ 60
QY 108 LDVADPATTIWOOMEELGMAPALOPTOGAMPAPAFASAFORRAGGVVASHLOSFLVSVRY 167
DB 61 LDVDPATTIWOOMDGLVAVVQPTTHGMPITFSAFORRAGGVVLTYSLOSFLSTAHALHLP 120
QY 168 LRLHLP 174
DB 121 LRYLAP 127

RESULT 12
MGF_CHICK
ID MGF_CHICK STANDARD; PRT; 201 AA.
AC P13854;
DT 01-JAN-1990 (Rel. 13, Created)
DT 01-JAN-1990 (Rel. 13, Last sequence update)
DT 28-FEB-2003 (Rel. 41, Last annotation update)
DE Myelomonocytic growth factor precursor (MGF).
OS Gallus gallus (Chicken).

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OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 OC Gallus.  
 RX NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=89231616; PubMed=2785450;  
 RA Leutz A., Damm K., Sternack E., Kowenz E., Nees S., Frank R.,  
 RA Gauspohl H., Pan Y., C.E., Smart J., Hayman K., Graf T.,  
 RT "Molecular cloning of the chicken myelomonocytic growth factor (CMGF)  
 RT reveals relationship to interleukin 6 and granulocyte colony  
 RT stimulating factor";  
 RL EMBO J. 8:175-181(1989).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=92195319; PubMed=1549124;  
 RA Sternack E., Blattner C., Graf T., Leutz A.;  
 RT "Structure of the chicken myelomonocytic growth factor gene and  
 RT specific activation of its promoter in avian myelomonocytic cells by  
 RT protein kinases";  
 RL Mol. Cell. Biol. 12:1728-1735(1992).  
 CC -1- FUNCTION: Hematopoietic growth factor that stimulates the  
 CC proliferation and colony formation of normal and transformed avian  
 CC cells of the myeloid lineage.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
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 CC  
 DR EMBL; M85034; AAA84694.1; -;  
 DR EMBL; X14477; CA332639.1; -;  
 DR PIR; A42247; A42247.  
 DR HSP; P09919; IHMG.  
 DR InterPro: IPR009079; 4 helix cytokine.  
 DR InterPro: IPR003629; GCSF\_MGF.  
 DR InterPro: IPR003573; IL6\_MGF\_GCSF.  
 DR InterPro: IPR003574; Interleukin\_6.  
 DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PR00433; IL6GCSFMGF.  
 DR PRINTS; PR00434; INTERLEUKIN\_6.  
 DR ProDom; PD008388; GCSF\_MGF; 1.  
 DR ProDom; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR SMART; PS00254; INTERLEUKIN\_6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR GlycoProtex; Growth factor; Signal.  
 FT CHAIN 1 23  
 FT SIGNAL 1 23  
 FT CHAIN 24 201  
 FT DISULFID 61 67  
 FT DISULFID 89 99  
 FT CARBOHYD 123 123  
 FT CARBOHYD 137 137  
 SQ SEQUENCE 201 AA; 22373 MW; 240A8DD21B424486 CRC64;  
 Query Match 33.9%; Score 304; DB 1; Length 201;  
 Best Local Similarity 40.6%; Pred. No. 9; 1e-20;  
 Matches 67; Conservative 28; Mismatches 68; Indels 2; Gaps 1;  
 QY 11 QSFLLKLEQVRKIQGDGAALQKLCATYKLGHEBELVLLGSLGIPWAPSSCPQALQ 70  
 DB 36 QLFHLKLEFTRKIRGDVAALQRAVCDTFCLEEEELVLPDPHVLVQAPDQCHKGQFQ 95  
 QY 71 LAGCLSGHSGLPFYQGLQALBESIPBLPTDITLQDVADFATTIWOQMBELGMAPAL 130  
 DB 96 AEVCFQIRAGLAVHDSLGAVRLPLPHHTTLLVETLQDDANNSSNQOQMEDGLDITVT 155  
 QY 131 QPTQ--GAPPAFAFAFORBAGVVLVASHLQSFLEVSRYRLRLAQ 173

DB 156 LPAEQSPPTFSGPFQOQVGFFILANQRFLETARYALRLHLAR 200  
 RESULT 13  
 ID Q90Y10 PRELIMINARY; PRT; 241 AA.  
 AC Q90Y10;  
 DT 01-DEC-2001 (TEMBLrel. 19, Created)  
 DT 01-DEC-2001 (TEMBLrel. 19, Last sequence update)  
 DT 05-JUL-2004 (TEMBLrel. 27, Last annotation update)  
 DE Interleukin-6 precursor.  
 GN Name=IL-6;  
 OS Gallus gallus (Chicken).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 OC Gallus.  
 RX NCBI\_TaxID=9031;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Schneider K., Klaas R., Kaspers B., Staeheli P.;  
 RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P., Rothwell L., Galyov E.E., Barrow P.A., Burnside J.,  
 RA Wigley P.;  
 RT "Differential cytokine expression in avian cells in response to  
 RT invasion by *Salmonella typhimurium*, *Salmonella enteritidis* and  
 RT *Salmonella gallinarum*";  
 RL Microbiology 146:3217-3226(2000).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P.;  
 RL Submitted (JAN-2003) to the EMBL/GenBank/DBJ databases.  
 DR EMBL; AJ209540; CA40812.1; -;  
 DR EMBL; AJ250838; CAC15566.2; -;  
 DR HSP; P05231; IALU.  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005125; F:cytokine activity; IEA.  
 DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.  
 DR GO; GO:0006955; P:immune response; IEA.  
 DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PR00433; IL6GCSFMGF.  
 DR PRINTS; PR00434; INTERLEUKIN\_6.  
 DR ProDom; PD008388; GCSF\_MGF; 1.  
 DR ProDom; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR SIGNAL.  
 FT CHAIN 1 47  
 FT SIGNAL 1 47  
 FT CHAIN 48 241  
 FT SIGNAL 48 241  
 SQ SEQUENCE 241 AA; 26790 MW; 657F8049F25BD2F8 CRC64;  
 Query Match 12.4%; Score 111; DB 2; Length 241;  
 Best Local Similarity 22.2%; Pred. No. 0.053;  
 Matches 46; Conservative 35; Mismatches 74; Indels 52; Gaps 7;  
 QY 3 LGPSSRP-----QSFLLKLEQVRKIQGDGAALQKLCATYKLGCH 43  
 DB 41 LPPAAVPLPAAADSGEVLGEERAGARRLLDCEPLARYLRRAVQLDQWCKKFTVCE 100  
 QY 44 PEEVLLGHSGLGIPWAPSSCPQALQALG-----CLSLHSGLPFYQGLQALBESIP 98  
 DB 101 NSMEELVRNNLNP-----KTEEDGCLLAGFDESKLTKLSGLPFAFQTYLRFIQFTFS 156  
 QY 99 LGPTLDTLQDVADFATTIWOQMBELGMAPALOPTQGANPAFAFAFORBAGVVL----- 152  
 DB 157 EKQNVESLQYSGHLAATIRQWV-----INPDEVLP--DSAAQSLANIKSDXOW 206  
 QY 153 ---VASHL-----QSFLEVSRYRLRL 171  
 DB 207 IEKITYMLLRDPTSEMEKTVRAVRYL 233

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RESULT 14
Q8M75 PRELIMINARY; PRT; 212 AA.
ID Q8M75
AC Q8M75;
DT 01-OCT-2002 (TrEMBLrel. 22, Created)
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE IL-6.
OS Sus scrofa (Pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Suidae; Sus.
OX NCBI_TaxID=9823;
RN [1]
RP SEQUENCE FROM N.A.
RA Lee D., Yoo H., Choi I.,
RL Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF518322; AAM74938.1; -.
DR HSSP; P05231; 1ALU.
DR GO; GO:0005576; C:extracellular; IEA.
DR GO; GO:0005125; F:Cytokine activity; IEA.
DR GO; GO:0005138; F:Interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:Immune response; IEA.
DR InterPro; IPR009079; 4 helix cytokine.
DR InterPro; IPR003573; IL6 MGF GCSP.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00469; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRODOM; PD004356; INTERLEUKIN_6.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 212 AA; 23881 MW; 1F540E7030BCFD77 CRC64;

Query Match 12.3%; Score 110.5; DB 2; Length 212;
Best Local Similarity 23.3%; Pred. No. 0.052;
Matches 37; Conservative 32; Mismatches 85; Indels 5; Gaps 3;

QY 16 KCLIEQVRKTIQGDGALQEKLCATYKLCHEPELVILGHSIGIP-WAPLSSCPQSALQAGLSQ 74
DB 52 KTEELIKYILGKISAMREMECEKYCKENSKVLAENNLNLPKVAEKDGCFOGSGFNOETC 111
QY 75 LSGHSGFLVYQGLQALBEGISPELGPTLDLTQLDVADPATTIWOQMEELGMAPALOPT- 133
DB 112 LMRITTVLVEFQIYLDYLONEYEGDKSIEAVQISIKALQITLRQKGNPKDATTPTT 171
QY 134 -OGAPAFAS--AFORRAGGVLVAASHLOSFEVSYRVLR 169
DB 172 NAGLDKQSQNEMKNTKIILIRSLDFLQFSLRAIR 210

RESULT 15
Q9XT80 PRELIMINARY; PRT; 208 AA.
ID Q9XT80
AC Q9XT80;
DT 01-NOV-1999 (TrEMBLrel. 12, Created)
DT 01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
DT 01-MAR-2004 (TrEMBLrel. 26, Last annotation update)
DE Interleukin 6.
OS Delphinapterus leucas (Beluga whale).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti;
OC Monodontidae; Delphinapterus.
OX NCBI_TaxID=9749;
RN [1]
RP SEQUENCE FROM N.A.
RA St-Laurent G., Archambault D.,
RL "Molecular cloning, phylogenetic analysis and expression of beluga
RL whale (Delphinapterus leucas) interleukin 6."
RL EMBL; AF076643; AAD42929.1; -.
DR HSSP; P05231; 1ALU.
DR GO; GO:0005576; C:extracellular; IEA.

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DR GO; GO:0005125; F:Cytokine activity; IEA.
DR GO; GO:0005138; F:Interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:Immune response; IEA.
DR InterPro; IPR009079; 4 helix cytokine.
DR InterPro; IPR003573; IL6 MGF GCSP.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00469; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRODOM; PD004356; INTERLEUKIN_6.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
SQ SEQUENCE 208 AA; 23456 MW; 81C85CCE80389C4 CRC64;

Query Match 12.3%; Score 108; DB 2; Length 208;
Best Local Similarity 21.3%; Pred. No. 0.086;
Matches 33; Conservative 35; Mismatches 81; Indels 6; Gaps 2;

QY 21 VKRIQGDGALQEKLCATYKLCHEPELVILGHSIGIP-WAPLSSCPQSALQAGLSQ 79
DB 52 IKYILGKISAMREMECEKYCKENSKVLAENNLNLPKVAEKDGCFOGSGFNOETC 111
QY 80 SGHFLVYQGLQALBEGISPELGPTLDLTQLDVADPATTIWOQMEELGMAPALOPTQGA--- 136
DB 112 TGLLEIYQIYLDYLONEYEGDKSIEAVQISIKALQITLRQKGNPKDATTPTT 171
QY 137 --MPAFASAFORRAGGVLVAASHLOSFEVSYRVLR 169
DB 172 NNIQSQNDMMRNTKIILIRSLDFLQFSLRAIR 206

Search completed: July 9, 2005, 12:39:02
Job time : 110.682 secs

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GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 9, 2005, 12:25:44 ; Search time 111.318 Seconds  
(without alignments)  
805.025 Million cell updates/sec

Title: US-10-751-242-2

Perfect score: 901  
Sequence: 1 MTPGLPASSLPQSFLKCLE.....SHQSFLEVSRYVRLHAP 175

Scoring table: BLOSUM62  
Gapop 10.0 , Gapext 0.5

Searched: 1612378 seqs, 512079187 residues

Total number of hits satisfying chosen parameters: 1612378

Minimum DB seq length: 0

Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : uniprot\_03:\*  
1: uniprot\_sprot:\*  
2: uniprot\_trembl:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	896	99.4	200	Q8N4W3	Q8N4W3 homo sapien
2	884.5	99.2	207	CSF3_HUMAN	P09919 homo sapien
3	744	82.6	194	CSF3_FELCA	002708 felis silve
4	744	82.6	195	Q9GJ10	Q9GJ10 felis silve
5	739	82.0	175	CSF3_CANFA	P33834 canis famill
6	738	81.9	174	CSF3_SHEEP	Q28746 ovis aries
7	727	80.7	195	CSF3_BOVIN	P35833 bos taurus
8	702	77.9	195	CSF3_PIG	002837 sus scrofa
9	642	71.3	208	CSF3_MOUSE	P09920 mus musculu
10	635	70.5	214	P97712	P97712 rattus norv
11	511	56.7	127	Q8MKE0	Q8MKE0 equus cabal
12	504	53.7	201	MGF_CHICK	P13854 gallus gall
13	111	12.3	241	Q90Y10	Q90Y10 gallus gall
14	110.5	12.3	212	Q8M475	Q8M475 sus scrofa
15	108	12.0	208	Q9XT80	Q9XT80 delphinape
16	106.5	11.8	212	IL6_PIG	P26893 sus scrofa
17	101	11.2	205	IL6_ORCOR	Q28747 orctinus orc
18	100	11.1	208	IL6_HORSE	Q95181 equus cabal
19	96	10.7	189	Q6N282	Q6N282 homo sapien
20	96	10.7	189	Q9H2A5	Q9H2A5 homo sapien
21	95	10.5	208	IL6_FELCA	P41883 felis silve
22	94.5	10.5	455	Q8D706	Q8D706 vibrio vuln
23	94	10.4	345	Q9KTL6	Q9KTL6 vibrio chol
24	93	10.3	189	Q9NPF7	Q9NPF7 homo sapien
25	91	10.1	189	Q6N280	Q6N280 homo sapien
26	89.5	9.9	214	Q8MKE5	Q8MKE5 mus scrofa
27	89.5	9.9	2175	1 HMCU DROME	P10180 drosophila
28	88.5	9.8	666	Q9A523	Q9A523 caulobacter
29	88.5	9.8	786	Q91019	Q91019 pseudomonas
30	88.5	9.8	1931	Q8KJY3	Q8KJY3 stigmatella
31	88	9.8	290	Q9P0S7	Q9P0S7 homo sapien

32	86	9.5	208	1	IL6_BOVIN	P26892 bos taurus
33	86	9.5	502	2	Q34008	Q34008 beta vulgar
34	86	9.5	788	2	Q8CP87	Q8CP87 mus musculu
35	86	9.5	850	2	Q7TQ21	Q7TQ21 mus musculu
36	86	9.5	851	2	Q8CP88	Q8CP88 mus musculu
37	86	9.5	852	2	Q811T9	Q811T9 mus musculu
38	85.5	9.5	211	2	Q865W7	Q865W7 camelus bac
39	85.5	9.5	1288	2	Q8LQ88	Q8LQ88 oryza sativ
40	85	9.4	193	2	Q9N2H9	Q9N2H9 sus scrofa
41	85	9.4	208	2	Q6V919	Q6V919 bubalus bub
42	84.5	9.4	209	1	IL6_PHOVI	Q28819 phoca vitul
43	84.5	9.4	211	1	IL6_LAMGL	Q865K6 lama glama
44	84.5	9.4	455	2	Q7MDW7	Q7MDW7 vibrio vuln
45	84	9.3	175	2	Q9TTH4	Q9TTH4 actus nigri

## ALIGNMENTS

RESULT 1	ID	Q8N4W3	PRELIMINARY;	PRT;	200 AA.
AC	Q8N4W3				
DT	01-OCT-2002 (Tremblrel. 22, Created)				
DT	01-OCT-2002 (Tremblrel. 22, Last sequence update)				
DE	01-MAR-2004 (Tremblrel. 26, Last annotation update)				
DE	Colony stimulating factor 3, isoform C.				
GN	Name=CSF3;				
OS	Homo sapiens (Human).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Homiidae; Homo.				
OX	NCBI_Taxid=9606;				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=Skin;				
RX	MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;				
RA	Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,				
RA	Klausner R.D., Collins P.S., Wagner L., Schein G.D.,				
RA	Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Hsieh F.,				
RA	Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,				
RA	Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,				
RA	Scapleton M., Soares M.B., Donald M.F., Caasvant T.L., Scheetz T.E.,				
RA	Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,				
RA	Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullany S.J.,				
RA	Bosak S.A., McMan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,				
RA	Richards S., Morley K.C., Hale S., Garcia A.M., Gay L.J., Hulik S.W.,				
RA	Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,				
RA	Whiting J., Helton E., Kettelman M., Madan A., Rodighiero S., Sanchez A.,				
RA	Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,				
RA	Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield J.S.,				
RA	Krzywicki M.I., Skalska U., Smalls D.E., Scherch A., Schein J.E.,				
RA	Jones S.J., Marra M.A.,				
RT	"Generation and initial analysis of more than 15,000 full-length human				
RT	and mouse cDNA sequences."				
RL	Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).				
RN	[2]				
RP	SEQUENCE FROM N.A.				
RC	TISSUE=Skin;				
RA	Strausberg R.,				
RL	Submitted (JUN-2002) to the EMBL/GenBank/DBJ databases.				
DR	EMBL; BC03245; AAH3245.1; -				
DR	HSSP; P09919; IGN.				
DR	GO; GO:0005576; C:extracellular; IEA.				
DR	GO; GO:0005125; F:cytokine activity; IEA.				
DR	GO; GO:0005138; F:interleukin-6 receptor binding; IEA.				
DR	GO; GO:0006955; P:immune response; IEA.				
DR	InterPro; IPR009079; 4 helix cytokine.				
DR	InterPro; IPR003629; GCSF MGF.				
DR	InterPro; IPR003573; IL6_MGF GCSF.				
DR	InterPro; IPR003574; Interleukin_6.				
DR	Pfam; PF00489; IL6; 1.				
DR	PRINTS; PR00433; IL6GCSFMGF.				

PRINTS; PR00434; INTERLEUKIN6.  
 DR PRODOM; PD006388; GCSF MGF; 1.  
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 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR SEQUENCE 200 AA; 21543 MW; 8648A55B329A96C CRC64;  
 Query Match 99.4%; Score 896; DB 2; Length 200;  
 Best Local Similarity 100.0%; Pred. NO. 6.9e-74;  
 Matches 174; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
 QY 2 TPLGPASSLPQSFLLKLEQVRKIQGDALQEQKCATYKCHPEELVLLGHSIGIPWAP 61  
 DB 27 TPLGPASSLPQSFLLKLEQVRKIQGDALQEQKCATYKCHPEELVLLGHSIGIPWAP 86  
 QY 62 LSSCPGQALQACCLSQHSGFLYQGLQALBESISELPTDLOLDVADPATITWQ 121  
 DB 87 LSSCPGQALQACCLSQHSGFLYQGLQALBESISELPTDLOLDVADPATITWQ 146  
 QY 122 MEELGAPALQPTQGMARAFSAFORAGGVVAHSIQSLFVSYRLRLAQP 175  
 DB 147 MEELGAPALQPTQGMARAFSAFORAGGVVAHSIQSLFVSYRLRLAQP 200  
 RESULT 2  
 CSF3\_HUMAN STANDARD; PRT; 207 AA.  
 ID P09919;  
 DT 01-MAR-1989 (Rel. 10, Created)  
 DT 01-MAR-1989 (Rel. 10, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF) (Pluripolietin)  
 DE (Flgrastim) (lenograstim).  
 GN Name=CSF3;  
 OS Homo sapiens (human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.  
 OX NCBI\_TaxId=9606;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=86118679; PubMed=3484805;  
 RA Nagata S., Tsuchiya M., Asano S., Yamazaki T., Yamamoto O.,  
 RA Hirata Y., Kubota N., Oheda M., Nomura H., Ono M.;  
 RT "Molecular cloning and expression of cDNA for human granulocyte  
 RT colony-stimulating factor.";  
 RL Nature 319:415-418(1986).  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=86220137; PubMed=2423327;  
 RA Nagata S., Tsuchiya M., Asano S., Yamamoto O., Hirata Y., Kubota N.,  
 RA Oheda M., Nomura H., Yamazaki T., Yamamoto O.,  
 RT "The chromosomal gene structure and two mRNAs for human granulocyte  
 RT colony-stimulating factor.";  
 RL EMBO J. 5:575-581(1986).  
 RN [3]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=87196936; PubMed=3494801;  
 RA Devlin J.J., Devlin P.E., Wyambo K., Lilly M.B., Rado T.A.,  
 RA Warren M.K.;  
 RT "Expression of granulocyte colony-stimulating factor by human cell  
 RT lines.";  
 RL J. Leukoc. Biol. 41:302-306(1987).  
 RN [4]  
 RP SEQUENCE FROM N.A., AND VARIANTS MET-157 AND THR-174.  
 RA Rieder M.J., Carrington D.P., Chung M.-W., Lee K.L., Poel C.L., Yi Q.,  
 RA Nickerson D.A.;  
 RT "SealSISNP5. NHLBI HU6682 program for genomic applications, UW-  
 RT FHCRG, Seattle, WA (URL: <http://pga.gs.washington.edu>).";  
 RL Submitted (JUN-2001) to the EMBL/GenBank/DBD databases.  
 RN [5]  
 RP SEQUENCE OF 19-207 FROM N.A.  
 RX MEDLINE=86151684; PubMed=2420009;  
 RA Souza L.M., Boone T.C., Gabrilove J., Lai P.H., Zsebo K.M.,

Murdoch D.C., Chazin V.R., Brzezewski J., Lu H., Chen K.K.,  
 RA Barendt J., Platzer E., Moore M.A.S., Mettelmann R., Welte K.;  
 RT "Recombinant human granulocyte colony-stimulating factor: effects on  
 RT normal and leukemic myeloid cells.";  
 RL Science 232:61-66(1986).  
 RN [6]  
 RP CARBOHYDRATE-LINKAGE SITE.  
 RX MEDLINE=93293942; PubMed=7685769;  
 RA Clogston C.L., Hu S., Boone T.C., Lu H.S.;  
 RT "glycosidase digestion, electrophoresis and chromatographic analysis  
 RT of recombinant human granulocyte colony-stimulating factor glycoforms  
 RT produced in Chinese hamster ovary cells.";  
 RL J. Chromatogr. A 637:55-62(1993).  
 RN [7]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=93106290; PubMed=1281794; DOI=10.1014/0014-5793(92)81521-M;  
 RA Zink T., Ross A., Amirostius D., Rudolph R., Holak T.A.;  
 RT "Secondary structure of human granulocyte colony-stimulating factor  
 RT derived from NMR spectroscopy.";  
 RL FEBS Lett. 314:435-439(1992).  
 RN [8]  
 RP STRUCTURE BY NMR.  
 RX MEDLINE=94304859; PubMed=7518249;  
 RA Zink T., Ross A., Inerts K., Cieslar C., Rudolph R., Holak T.A.;  
 RT "Structure and dynamics of the human granulocyte colony-stimulating  
 RT factor determined by NMR spectroscopy. Loop mobility in a four-helix-  
 RT bundle protein.";  
 RL Biochemistry 33:8453-8463(1994).  
 RN [9]  
 RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).  
 RX MEDLINE=93281718; PubMed=7685117;  
 RA Hill C.P., Osblund T.D., Eisenberg D.;  
 RT "The structure of granulocyte-colony-stimulating factor and its  
 RT relationship to other growth factors.";  
 RL Proc. Natl. Acad. Sci. U.S.A. 90:5167-5171(1993).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 CC cytokines that act in hematopoiesis by controlling the production,  
 CC differentiation, and function of 2 related white cell populations  
 CC of the blood, the granulocytes and the monocytes-macrophages. This  
 CC CSF induces granulocytes.  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;  
 CC Name=long;  
 CC IsoId=P09919-1; Sequence=Displayed;  
 CC Name=short;  
 CC IsoId=P09919-2; Sequence=VSP\_002673;  
 CC -1- PTM: O-glycan consists of Gal-GalNAc disaccharide which can be  
 CC modified with up to two sialic acid residues (done in  
 CC recombinantly expressed G-CSF from CHO cells).  
 CC -1- PHARMACOTIC: Available under the names Neupogen or Granulokine  
 CC (Amgen/Kochne) and Granocyte (Rhône-Poulenc). Used to treat  
 CC neutropenia (a disorder characterized by an extremely low number  
 CC of neutrophils in blood).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
 CC -1- CAUTION: Ref.4 misquotes the gene name as "CSF1".  
 CC NOTE=Clinical information on Neupogen/Granulokine;  
 CC WWW=<http://www.neupogen.com/>.  
 CC -----  
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 CC or send an email to [license@sib-sib.ch](mailto:license@sib-sib.ch)).  
 CC -----  
 DR EMBL: X03438; CAA27168.1; -  
 DR EMBL: M13008; AAA03056.1; -  
 DR EMBL: X03656; CAA27291.1; -  
 DR EMBL: X03655; CAA27290.1; -

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AC 09GU0,
DT 01-MAR-2001 (TREMELrel. 16, Created)
DT 01-MAR-2001 (TREMELrel. 16, Last sequence update)
DT 05-JUL-2004 (TREMELrel. 27, Last annotation update)
DE Granulocyte colony-stimulating factor precursor.
GN Name=G-CSF;
OS Fells silvestris catus (Cat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Fells.
OX NCBI_TaxID=9685;

RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE=21531548; PubMed=11675019; DOI=10.1016/S0378-1119(01)00575-3;
RA Yamamoto A., Iwata A., Tuchiya K., Katsumata A., Oishi K., Saito T.,
RA Tsujimoto H., Hasegawa A., Ueda S.;
RT "Molecular cloning and expression of the cDNA encoding feline
RT granulocyte colony-stimulating factor.";
RL Gene 274:263-269(2001).
DR EMBL; AB042552; BAB17789.1; -.
DR EMBL; AB042553; BAB17757.1; -.
DR HSSP; P35834; 1BGE.
DR GO; GO:0005576; C:cytoplasmic; IEA.
DR GO; GO:0005125; F:cytokine activity; IEA.
DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.
DR GO; GO:0006955; P:immune response; IEA.
DR InterPro; IPR009079; 4 helix cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR InterPro; IPR003574; Interleukin_6.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR PRINTS; PR00434; INTERLEUKIN_6.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
DR SIGNAL.
KM SIGNAL.
FT SIGNAL.
SQ SEQUENCE 195 AA; 21255 MW; 544C682909412FCF CRC64;

Query Match 82.6%; Score 744; DB 2; Length 195;
Best Local Similarity 81.0%; Pred. No. 5, 4e-60;
Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;

QY 2 TPLGPASSLPQSFLKCLKEQVRKIQGDGAALOELCATYKLCHEBELVILGSHGIPWA 61
DB 22 TPLGPSSLPQSFLKCLKEQVRKVQADGTALQETLCAMHLCHEBELVILGSHGIPWA 81
QY 62 LSSCSPQALQAGCLSQLHSGFLFYQGLQALEGISPELGPTDTLOLVADPATITWQ 121
DB 82 LSSCSPQALQAGCLSQLHSGFLFYQGLQALEGISPELGPTDTLOLVADPATITWQ 141
QY 122 MEELGMAPALOPTQGMPPASAFORRAGGVLVASHOSFLEVSRYVLRHLAOP 175
DB 142 MEDVGMAPVAPPTQGTMPFTTSAFORRAGGVLVASHOSFLEVSRYVLRHLAOP 195

RESULT 5
CSF3_CANFA STANDARD; PRT; 175 AA.
ID CSF3_CANFA
AC P35834;
DT 01-JUN-1994 (Rel. 29, Created)
DT 01-JUN-1994 (Rel. 29, Last sequence update)
DT 25-OCT-2004 (Rel. 45, Last annotation update)
DE Granulocyte colony-stimulating factor (G-CSF).
GN Name=GCSF;
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
RN [1]
RP X-RAY CRYSTALLOGRAPHY (2.2 ANGSTROMS).
RX MEDLINE=94076341; PubMed=7504736;
RA Lovejoy B., Cascio D., Eisenberg D.;

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RT "Crystal structure of canine and bovine granulocyte-colony stimulating
RT factor (G-CSF).";
RL J. Mol. Biol. 234:640-653(1993).
CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are
CC cytokines that act in hematopoiesis by controlling the production,
CC differentiation, and function of 2 related white cell populations
CC of the blood, the granulocytes and the monocytes-macrophages. This
CC CSF induces granulocytes.
CC -1- SUBUNIT: Monomer.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- PTM: O-glycosylated.
CC -1- SIMILARITY: Belongs to the IL-6 superfamily.
DR PDB; 1BGD; X-ray; @=1-175.
DR PDB; 1BGE; X-ray; A/B=1-175.
DR InterPro; IPR009079; 4 helix cytokine.
DR InterPro; IPR003629; GCSF_MGF.
DR InterPro; IPR003573; IL6_MGF_GCSF.
DR Pfam; PF00489; IL6; 1.
DR PRINTS; PR00433; IL6GCSFMGF.
DR ProDom; PD008388; GCSF_MGF; 1.
DR SMART; SM00126; IL6; 1.
DR PROSITE; PS00254; INTERLEUKIN_6; 1.
KM 3D-structure; Cytokine; Glycoprotein; Growth factor.
FT DISULFID 37 43
FT DISULFID 65 75
FT CARBOHYD 134 134 O-linked (GalNAc...) (By similarity).
FT STRAND 10 10
FT HELIX 12 39
FT HELIX 45 55
FT TURN 56 56
FT HELIX 63 65
FT TURN 67 69
FT HELIX 72 92
FT TURN 93 95
FT TURN 98 100
FT TURN 101 125
FT HELIX 126 126
FT TURN 144 171
FT HELIX 172 172
FT STRAND 173 173
SQ SEQUENCE 175 AA; 18858 MW; 28C26B24990C6DB3 CRC64;

Query Match 82.0%; Score 739; DB 1; Length 175;
Best Local Similarity 80.6%; Pred. No. 1, 4e-59;
Matches 141; Conservative 11; Mismatches 23; Indels 0; Gaps 0;

QY 1 MTPLGASLPQSFLKCLKEQVRKIQGDGAALOELCATYKLCHEBELVILGSHGIPWA 60
DB 1 MAPLPQGLPQSFLKCLKEQVRKVQADGTALQETLCATHLCHEBELVILGSHGIPWA 60
QY 61 PLSSCSPQALQAGCLSQLHSGFLFYQGLQALEGISPELGPTDTLOLVADPATITWQ 120
DB 61 PLSSCSPQALQAGCLSQLHSGFLFYQGLQALEGISPELGPTDTLOLVADPATITWQ 120
QY 121 MEELGMAPALOPTQGMPPASAFORRAGGVLVASHOSFLEVSRYVLRHLAOP 175
DB 121 QMEDVGMAPVAPPTQGTMPFTTSAFORRAGGVLVASHOSFLEVSRYVLRHLAOP 175

RESULT 6
CSF3_SHEEP STANDARD; PRT; 174 AA.
ID CSF3_SHEEP
AC Q28746;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 05-JUL-2004 (Rel. 44, Last annotation update)
DE Granulocyte colony-stimulating factor (G-CSF).
GN Name=CSF3;
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Caprine; Ovis.
OX NCBI_TaxID=9940;

```

[1]  
 RN SEQUENCE FROM N.A.  
 RP MEDLINE=95102116; PubMed=7528579;  
 RA O'Brien P.M., Seow H.F., Roedel J.S., Wood P.R.;  
 RT "Cloning and sequencing of an ovine granulocyte colony-stimulating  
 factor cDNA."  
 RL DNA Seq. 4:339-342(1994).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 cytokines that act in hematopoiesis by controlling the production,  
 differentiation, and function of 2 related white cell populations  
 of the blood, the granulocytes and the monocytes-macrophages. This  
 CSF induces granulocytes (By similarity).  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- PTM: O-glycosylated (By similarity).  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
 -----  
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 or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 -----  
 CC EMBL: L07939; AAA68006.1; -  
 CC PIR: T10268; T10268.  
 DR HSP: P09919; IRHG.  
 DR InterPro: IPR009079; 4\_helix\_cytokine.  
 DR InterPro: IPR003629; GCSF\_MGF.  
 DR InterPro: IPR003573; IL6\_MGF\_GCSF.  
 DR Pfam: PF00489; IL6; 1.  
 DR PRINTS: PR00433; IL6GCSFMGF.  
 DR ProDom: PD008388; GCSF\_MGF; 1.  
 DR SMART: SM00126; IL6; 1.  
 DR PROSITE: PS00254; INTERLEUKIN\_6; 1.  
 DR Cytokine; Glycoprotein; Growth factor.  
 FT DISULFID 36 42 By similarity.  
 FT DISULFID 64 74 By similarity.  
 FT CARBOHYD 133 133 O-linked (GalNAc...) (By similarity).  
 SQ SEQUENCE 174 AA; 18806 MW; BASA8F8D23ACDIE CRC64;  
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 Query Match 81.9%; Score 738; DB 1; Length 174;  
 Best Local Similarity 82.2%; Pred. No. 1.7e-59;  
 Matches 143; Conservative 10; Mismatches 21; Indels 0; Gaps 0;  
 Oy 2 TPLGPASSIPQSFLLKLEQVRKIQGDGALOEKLCATYKCHPELVILGSHGIPAP 61  
 Db 1 TPLGPASSIPQSFLLKLEQVRKIQGDGALOEKLCATYKCHPELVILGSHGIPAP 60  
 Oy 62 LSSCSQALQAGLSQHSGLFLYQGLQALGSLPELPTLDTLQDVADFATTIWOQ 121  
 Db 61 LSSCSQALQAGLSQHSGLFLYQGLQALGSLPELPTLDTLQDVADFATTIWOQ 120  
 Oy 122 MEELGMADALOPTQGAAMPAPAFASFORBAGVIVASHLOSFLVSYVLRHLAOP 175  
 Db 121 MEDLGVAHVAVQPTQGTMTPTFSAPQRAGGVIVASQLOFLGALRGALRYLAP 174  
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 RESULT 7  
 CSF3\_BOVIN  
 ID CSF3\_BOVIN STANDARD; PRT; 195 AA.  
 AC P35833; OSTV89;  
 DT 01-JUN-1994 (Rel. 29, Created)  
 DT 16-OCT-2001 (Rel. 40, Last sequence update)  
 DT 25-OCT-2004 (Rel. 45, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF).  
 GN Name=CSF3; Synonyms=GCSF;  
 OS Bos taurus (Bovine).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;  
 OC Bovinae; Bos.  
 OC NCBI\_TaxID=9913;

[1]  
 RN SEQUENCE FROM N.A.  
 RP STRAIN-Holstein;  
 RA Heidari M., Kehrl M.E. Jr.;  
 RT "Cloning, sequencing, and analysis of cDNA encoding bovine granulocyte  
 colony stimulating factor."  
 RL Submitted (SEP-1998) to the EMBL/GenBank/DBJ databases.  
 RN [2]  
 RP X-RAY CRYSTALLOGRAPHY (1.7 ANGSTROMS).  
 RX MEDLINE=94076341; PubMed=7504736;  
 RA Lovejoy B., Cascio D., Eisenberg D.;  
 RT "Crystal structure of canine and bovine granulocyte-colony stimulating  
 factor (G-CSF)."  
 RL J. Mol. Biol. 234:640-653 (1993).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 cytokines that act in hematopoiesis by controlling the production,  
 differentiation, and function of 2 related white cell populations  
 of the blood, the granulocytes and the monocytes-macrophages. This  
 CSF induces granulocytes.  
 CC -1- SUBUNIT: Monomer.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- PTM: O-glycosylated.  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
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 or send an email to [license@isb-sib.ch](mailto:license@isb-sib.ch)).  
 -----  
 CC EMBL: AF092533; AAD16102.1; -  
 CC PDB: 1BSC; X-ray; @-22-195;  
 DR InterPro: IPR009079; 4\_helix\_cytokine.  
 DR InterPro: IPR003629; GCSF\_MGF.  
 DR InterPro: IPR003573; IL6\_MGF\_GCSF.  
 DR Pfam: PF00489; IL6; 1.  
 DR PRINTS: PR00433; IL6GCSFMGF.  
 DR ProDom: PD008388; GCSF\_MGF; 1.  
 DR SMART: SM00126; IL6; 1.  
 DR PROSITE: PS00254; INTERLEUKIN\_6; 1.  
 DR 3D-structure; Cytokine; Glycoprotein; Growth factor; Signal.  
 FT SIGNAL 1 21 Potential.  
 FT CHAIN 22 195 Granulocyte colony-stimulating factor.  
 FT DISULFID 57 63  
 FT DISULFID 85 95  
 FT CARBOHYD 154 154 O-linked (GalNAc...) (By similarity).  
 FT CONFLICT 93 94 TS -> RG (in Ref. 2).  
 FT HELIX 32 60  
 FT HELIX 65 69  
 FT HELIX 70 71  
 FT TURN 72 75  
 FT HELIX 76 76  
 FT TURN 83 85  
 FT HELIX 87 89  
 FT TURN 92 112  
 FT HELIX 113 115  
 FT TURN 118 120  
 FT HELIX 121 145  
 FT HELIX 164 191  
 FT TURN 192 192  
 SQ SEQUENCE 195 AA; 21431 MW; 8C06119E4ADFPA73 CRC64;  
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 Query Match 80.7%; Score 727; DB 1; Length 195;  
 Best Local Similarity 81.0%; Pred. No. 1.9e-58;  
 Matches 141; Conservative 11; Mismatches 22; Indels 0; Gaps 0;  
 Oy 2 TPLGPASSIPQSFLLKLEQVRKIQGDGALOEKLCATYKCHPELVILGSHGIPAP 61  
 Db 22 TPLGPASSIPQSFLLKLEQVRKIQGDGALOEKLCATYKCHPELVILGSHGIPAP 81  
 Oy 62 LSSCSQALQAGLSQHSGLFLYQGLQALGSLPELPTLDTLQDVADFATTIWOQ 121

DB 82 LSSCSQSLQTLSCNLQGLGLVLYOGLQALAGISBELAPLDTLQDVTDFATNIMQ 141  
 QY 122 MEELGNAPALQPTQGMAMPAPASAFORRAGGVVYASHQSLFVSYRLRLAOP 175  
 DB 142 MEDLGAAPAVOPQGMPTFTSAFORRAGGVVYASHQSLFVSYRLRLAOP 195

## RESULT 8

CSF3\_PIG STANDARD; PRT; 195 AA.  
 ID AC 002837; 019180; (Rel. 36, Created)  
 DT 15-JUL-1998 (Rel. 39, Last sequence update)  
 DT 30-MAY-2000 (Rel. 44, Last annotation update)  
 DT 05-JUL-2004 (Rel. 44, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF).  
 GN Name=CSF3;  
 OS Sus scrofa (Pig).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Suidae; Sus.  
 NCBI\_Taxid=9823;  
 RN (1)  
 RP SEQUENCE FROM N.A.  
 RA Kulmburg P.;  
 RL Submitted (JAN-1997) to the EMBL/GenBank/DBJ databases.  
 RC [2]  
 RC TISSUE=Liver;  
 RC Gloster S.E., Sandeman R.M., Strom A.D.G.;  
 RA "Cloning of a cDNA and gene encoding porcine granulocyte-colony  
 stimulating factor";  
 RT Submitted (SEP-1997) to the EMBL/GenBank/DBJ databases.

-1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 cytokines that act in hematopoiesis by controlling the production,  
 differentiation, and function of 2 related white cell populations  
 of the blood, the granulocytes and the monocytes-macrophages. This  
 CSF induces granulocytes (By similarity).  
 -1- SUBUNIT: Monomer.  
 -1- SUBCELLULAR LOCATION: Secreted.  
 -1- PTM: O-glycosylated (By similarity).  
 -1- SIMILARITY: Belongs to the IL-6 superfamily.

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-----  
 EMBL; Y10494; CAA71518.1; -;  
 EMBL; U68482; AAB70701.1; -;  
 EMBL; U68481; AAB70700.1; -;  
 DR HSSP; P09919; 1RHG.  
 DR InterPro; IPR009079; 4\_helix\_cytokine.  
 DR InterPro; IPR003629; GCSF\_MGF.  
 DR InterPro; IPR003573; IL6\_MGF\_GCSF.  
 DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PR00433; IL6GCSFMGF.  
 DR SMART; SM00838; GCSF\_MGF; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 DR Cytokine; Glycoprotein; Growth factor; Signal.  
 FT SIGNAL 1 21 Potential.  
 FT CHAIN 22 195 Granulocyte colony-stimulating factor.  
 FT DISULFID 57 63 By similarity.  
 FT DISULFID 85 95 By similarity.  
 FT CARBOHYD 154 154 O-linked (GalNAc... ) (By similarity).  
 FT CONFLICT 123 123 A -> R (in Ref. 1).  
 FT SEQUENCE 195 AA; 21214 MW; 84787F2DB0AEALC CRC64;

Query Match 77.9%; Score 702; DB 1; Length 195;  
 Best Local Similarity 79.2%; Pred. No. 3.8e-56;

Matches 137; Conservative 11; Mismatches 25; Indels 0; Gaps 0;  
 QY 3 PLGPASSLPQSFPLKCLEQVRKIQGGALQKATYVLCHEPELVYLGHSIGIPWAPL 62  
 DB 23 PLSPASSLPQSFPLKCLEQVRKIQGGALQKATYVLCHEPELVYLGHSIGIPWAPL 82  
 QY 63 SSCPSQALQAGCLSLHSGFLVYGLLQALAGISBELAPLDTLQDVTDFATNIMQ 122  
 DB 83 SSCPSQALQAGCLSLHSGFLVYGLLQALAGISBELAPLDTLQDVTDFATNIMQ 142  
 QY 123 EELGNAPALQPTQGMAMPAPASAFORRAGGVVYASHQSLFVSYRLRLAOP 175  
 DB 143 EDLGNAPALQPTQGMPTFTSAFORRAGGVVYASHQSLFVSYRLRLAOP 195

## RESULT 9

CSF3\_MOUSE STANDARD; PRT; 208 AA.  
 ID AC P09920;  
 DT 01-MAR-1989 (Rel. 10, Created)  
 DT 01-MAR-1989 (Rel. 10, Last sequence update)  
 DT 05-JUL-2004 (Rel. 44, Last annotation update)  
 DE Granulocyte colony-stimulating factor precursor (G-CSF).  
 GN Name=Csf3; Synonyms=Csf3;  
 OS Mus musculus (Mouse).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
 NCBI\_Taxid=10090;  
 RN (1)  
 RP SEQUENCE FROM N.A.  
 RA MEDLINE=87017003; PubMed=3489940;  
 RA Tsuchiya M., Asano S., Kaziro Y., Nagata S.;  
 RT "Isolation and characterization of the cDNA for murine granulocyte  
 colony-stimulating factor";  
 RL Proc. Natl. Acad. Sci. U.S.A. 83:7633-7637(1986).  
 RN (2)  
 RP SEQUENCE FROM N.A.  
 RA MEDLINE=87190474; PubMed=3494605;  
 RA Tsuchiya M., Kaziro Y., Nagata S.;  
 RT "The chromosomal gene structure for murine granulocyte colony-  
 stimulating factor";  
 RL Eur. J. Biochem. 165:7-12(1987).  
 RN (3)  
 RP PARTIAL SEQUENCE.  
 RX PubMed=3501294;

RA Simpson R.J., Nice E.C., Nicola N.A.;  
 RT "Structural studies on the murine granulocyte colony-stimulating  
 factor";  
 RL Biol. Chem. Hoppe-Seyler 368:1327-1331(1987).  
 CC -1- FUNCTION: Granulocyte/macrophage colony-stimulating factors are  
 cytokines that act in hematopoiesis by controlling the production,  
 differentiation, and function of 2 related white cell populations  
 of the blood, the granulocytes and the monocytes-macrophages. This  
 CSF induces granulocytes.  
 -1- SUBUNIT: Monomer.  
 -1- SUBCELLULAR LOCATION: Secreted.  
 -1- PTM: O-glycosylated (By similarity).  
 -1- SIMILARITY: Belongs to the IL-6 superfamily.

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 EMBL; M13926; AAA37672.1; -;  
 EMBL; X05402; CAA28986.1; -;  
 DR PIR; A29516; A26486.  
 DR HSSP; P09919; 1RHG.  
 DR InterPro; IPR009079; 4\_helix\_cytokine.



DR InterPro; IPR003629; GCSF\_MGF.  
DR InterPro; IPR003573; IL6\_MGF\_GCSF.  
DR Pfam; PF00489; IL6; 1.  
DR PRINTS; PR00433; IL6GCSFMGF.  
DR ProDom; PD008388; GCSF\_MGF; 1.  
DR ProDom; PD004356; Interleukin\_6; 1.  
DR SMART; SM00126; IL6; 1.  
DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
DR Cytokine; Direct protein sequencing; Glycoprotein; Growth factor;  
KM Signal.  
FT SIGNAL 1 30  
FT CHAIN 1 208 Granulocyte colony-stimulating factor.  
FT DISULFID 72 78 By similarity.  
FT DISULFID 100 110 By similarity.  
FT CARBOHYD 169 169 O-linked (GALNAc...) (By similarity).  
SQ SEQUENCE 208 AA; 22421 MW; 0BF3622135C906DB CRC64;  
  
Query Match 71.3%; Score 642; DB 1; Length 208;  
Best Local Similarity 74.6%; Pred. No. 1.2e-50;  
Matches 129; Conservative 11; Mismatches 33; Indels 0; Gaps 0;  
  
QY 1 MTRLPASSLPSPFLIKCLEQVRKIQGDGALQEKLCATYKLCHEPELVLAGHSIGIPWA 60  
DB 36 VSALPSPFLPSPFLIKSLEQVRKIQASGVLEQLCATYKLCHEPELVLAGHSIGIPWA 95  
QY 61 PLSSCPSQALQAGCISQHSGLFLYQGLQALLEGISPELPTLDLQADVADPATTWQ 120  
DB 96 SLSSGCSQALQQTQKCSQHSGLFLYQGLQALLEGISPELPTLDLQADVADPATTWQ 155  
QY 121 QMEELGMAPALOPTQGAMPAPAFAPORRAGVAVASHLOSFLVSVRYLRHLAOP 173  
DB 156 QMENIGVAPTVPTQTSAMPAPAFAPORRAGVAVASHLOSFLVSVRYLRHLAOP 208  
  
RESULT 10  
P97712 PRELIMINARY; PRT; 214 AA.  
ID P97712  
AC P97712;  
DT 01-MAY-1997 (TREMBLrel. 03, Created)  
DT 01-MAY-1997 (TREMBLrel. 03, Last sequence update)  
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)  
DE Granulocyte colony stimulating factor.  
OS Rattus norvegicus (Rat).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.  
OX NCBI\_TaxID=10116;  
RN [1]  
SEQUENCE FROM N.A.  
RX MEDLINE=97074656; PubMed=8917083; DOI=10.1016/0378-1119(96)00131-X;  
RA Han S.W., Ramash N., Osborne W.R.;  
RT "Cloning and expression of the cDNA encoding rat granulocyte colony-  
stimulating factor";  
RT Gene 175:101-104(1996).  
RL EMBL; U37101; AAC52915.1; -  
DR PIR; JCS043; JCS043.  
DR HSSP; P09919; IRHG.  
DR GO; GO:0005576; C:cytoregulatory; IEA.  
DR GO; GO:0005125; F:cytokine activity; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0006955; P:immune response; IEA.  
DR InterPro; IPR009079; 4\_helix\_cytokine.  
DR InterPro; IPR003629; GCSF\_MGF.  
DR InterPro; IPR003573; IL6\_MGF\_GCSF.  
DR Pfam; PF00489; IL6; 1.  
DR PRINTS; PR00433; IL6GCSFMGF.  
DR ProDom; PD008388; GCSF\_MGF; 1.  
DR SMART; SM00126; IL6; 1.  
DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
SQ SEQUENCE 214 AA; 23659 MW; 29BB88B17B684C55 CRC64;  
  
Query Match 70.5%; Score 635; DB 2; Length 214;  
Best Local Similarity 72.6%; Pred. No. 5.6e-50;  
Matches 127; Conservative 12; Mismatches 36; Indels 0; Gaps 0;

QY 1 MTRLPASSLPSPFLIKCLEQVRKIQGDGALQEKLCATYKLCHEPELVLAGHSIGIPWA 60  
DB 27 VSALPSPFLPSPFLIKSLEQVRKIQANTLEBQCATYKLCHEPELVLAGHSIGIPWA 86  
QY 61 PLSSCPSQALQAGCISQHSGLFLYQGLQALLEGISPELPTLDLQADVADPATTWQ 120  
DB 87 SLSSGCSQALQQTQKCSQHSGLFLYQGLQALLEGISPELPTLDLQADVADPATTWQ 146  
QY 121 QMEELGMAPALOPTQGAMPAPAFAPORRAGVAVASHLOSFLVSVRYLRHLAOP 175  
DB 147 QMENIGVAPTVPTQTSAMPAPAFAPORRAGVAVASHLOSFLVSVRYLRHLAOP 201  
  
RESULT 11  
Q8MKE0 PRELIMINARY; PRT; 127 AA.  
ID Q8MKE0  
AC Q8MKE0;  
DT 01-OCT-2002 (TREMBLrel. 22, Created)  
DT 01-OCT-2002 (TREMBLrel. 22, Last sequence update)  
DT 01-MAR-2004 (TREMBLrel. 26, Last annotation update)  
DE Granulocyte colony-stimulating factor.  
GN Name=G-CSF;  
OS Equus caballus (Horse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.  
OX NCBI\_TaxID=9796;  
RN [1]  
SEQUENCE FROM N.A.  
RA Noronha L.B., Takafuji V.A., Sharova L.V., Crisman M.V., Howard R.D.;  
RL Submitted (Apr-2002) to the EMBL/Genbank/DBJ databases.  
DR EMBL; AF503365; AAM34205.1; -  
DR HSSP; P35833; IBGC;  
DR GO; GO:0005576; C:cytoregulatory; IEA.  
DR GO; GO:0005125; F:cytokine activity; IEA.  
DR GO; GO:0008083; F:growth factor activity; IEA.  
DR GO; GO:0006955; P:immune response; IEA.  
DR InterPro; IPR009079; 4\_helix\_cytokine.  
DR InterPro; IPR003629; GCSF\_MGF.  
DR InterPro; IPR003573; IL6\_MGF\_GCSF.  
DR Pfam; PF00489; IL6; 1.  
DR PRINTS; PR00433; IL6GCSFMGF.  
DR ProDom; PD008388; GCSF\_MGF; 1.  
DR SMART; SM00126; IL6; 1.  
DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
SQ SEQUENCE 127 AA; 13657 MW; 25559C2569802077 CRC64;  
  
Query Match 56.7%; Score 511; DB 2; Length 127;  
Best Local Similarity 79.5%; Pred. No. 7e-39;  
Matches 101; Conservative 9; Mismatches 17; Indels 0; Gaps 0;  
  
QY 49 VLHSGIGIPWAPLSSCPSQALQAGCISQHSGLFLYQGLQALLEGISPELPTLDLQ 108  
DB 1 MLHSGIGIPWAPLSSCPSQALQAGCISQHSGLFLYQGLQALLEGISPELPTLDLQ 60  
QY 109 LDVADPATTWQMEELGMAPALOPTQGAMPAPAFAPORRAGVAVASHLOSFLVSVRY 168  
DB 61 LDVADPATTWQMEELGMAPALOPTQGAMPAPAFAPORRAGVAVASHLOSFLVSVRY 120  
QY 169 LRHLAOP 175  
DB 121 LRHLAOP 127  
  
RESULT 12  
MGF CHICK STANDARD; PRT; 201 AA.  
ID MGF CHICK  
AC P13854;  
DT 01-JAN-1980 (Rel. 13, Created)  
DT 01-JAN-1980 (Rel. 13, Last sequence update)  
DT 28-FEB-2003 (Rel. 41, Last annotation update)  
DE Myelomonocytic growth factor precursor (MGF).  
OS Gallus gallus (Chicken).

CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 CC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 CC Gallus.  
 CC NCBI\_TaxID=9031;  
 RN (1)  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=6923161; PubMed=2785450;  
 RA Leutz A., Damm K., Sterneck E., Kowenz B., Nees S., Frank R.,  
 RA Gausepohl H., Pen Y.-C.E., Smart J., Hayman M., Graf T.;  
 RT "Molecular cloning of the chicken myelomonocytic growth factor (CMGF)  
 RT reveals relationship to interleukin 6 and granulocyte colony  
 RT stimulating factor.";  
 RL EMBL J. 8:175-181(1989).  
 RN (2)  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=92195319; PubMed=1549124;  
 RA Sterneck E., Balthner C., Graf T., Leutz A.;  
 RT "Structure of the chicken myelomonocytic growth factor gene and  
 RT specific activation of its promoter in avian myelomonocytic cells by  
 RT protein kinases.";  
 RL Mol. Cell. Biol. 12:1728-1735(1992).  
 CC -1- FUNCTION: Hematopoietic growth factor that stimulates the  
 CC proliferation and colony formation of normal and transformed avian  
 CC cells of the myeloid lineage.  
 CC -1- SUBCELLULAR LOCATION: Secreted.  
 CC -1- SIMILARITY: Belongs to the IL-6 superfamily.  
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CC EMBL; M85034; AAA8694.1; -;  
 CC EMBL; X14477; CA32639.1; -;  
 CC PIR; A42247; A42247.  
 CC HSP; P05919; IRHG.  
 CC InterPro; IPR009079; 4\_helix\_cytokine.  
 CC InterPro; IPR003629; GCSF\_MGF.  
 CC InterPro; IPR003573; IL6\_MGF\_GCSF.  
 CC InterPro; IPR003574; Interleukin\_6.  
 CC Pfam; PF00489; IL6; 1.  
 CC PRINTS; PR00433; IL6GCSFMGF.  
 CC PRINTS; PR00434; INTERLEUKIN\_6.  
 CC PRODOM; PD008388; GCSF\_MGF; 1.  
 CC PRODOM; PD004356; Interleukin\_6; 1.  
 CC SMART; SM00126; IL6; 1.  
 CC PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 CC Glycoprotein; Growth factor; Signal.  
 CC SIGNAL; 1 23  
 CC CHAIN; 24 201  
 CC DISULFID; 61 67  
 CC DISULFID; 89 99  
 CC CARBOHYD; 123 123  
 CC CARBOHYD; 137 137  
 CC SEQUENCE; 201 AA; 22373 MW; 240A8DD21B424456 CRC64;

Query Match 33.7%; Score 304; DB 1; Length 201;  
 Best Local Similarity 40.6%; Pred. No. 1e-19;  
 Matches 67; Conservative 28; Mismatches 68; Indels 2; Gaps 1;

QY 12 QSTLKLTEBVRKIQGGALQELCATYKLCHEBEVLVGHSGIGTMAPLSSCPQALQ 71  
 DB 36 QLTFLHKLLEFTRKIRGVALQRAVCDTFLCTEBEQLVQPDPAVLQADQCHKRQFQ 95  
 QY 72 LAGCLSGHGLFLYQGLQALBSIGSPDLGPTDPTLQLDVADPATTYWOQMEELGMAPAL 131  
 DB 96 AAVCFYQIRGSLAHYHSLGAVLRLPRHTTVTTQLDANLSSNTQQQMEDGLDPTVT 155  
 QY 132 QPTQ--GAMPAPASAFORRAGVTVASHLOSFLVSVYRLRLHQA 174

DB 156 LPAEQSSPPTFGSGFQOQVGGFFLIANFORLETAYRALRLHAR 200

## RESULT 13

ID Q90Y10 PRELIMINARY; PRT; 241 AA.

AC Q90Y10;  
 DT 01-DEC-2001 (TEMBLrel. 19, Created)  
 DT 01-DEC-2001 (TEMBLrel. 19, Last sequence update)  
 DT 05-JUN-2004 (TEMBLrel. 27, Last annotation update)  
 DE Interleukin-6 precursor.

GN Name=IL-6;  
 OS Gallus gallus (Chicken).

CC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 CC Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;  
 CC Gallus.  
 CC NCBI\_TaxID=9031;  
 RN (1)  
 RP SEQUENCE FROM N.A.  
 RA Schneider K., Klaas R., Kaspers B., Staeheli P.;  
 RL Submitted (FEB-2001) to the EMBL/GenBank/DBJ databases.

RN (2)  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P., Rothwell L., Galyov E.E., Barrow P.A., Burnside J.,  
 RA Wigley P.;  
 RT "Differential cytokine expression in avian cells in response to  
 RT invasion by Salmonella typhimurium, Salmonella enteritidis and  
 RT Salmonella gallinarum.";  
 RL Microbiology 146:3217-3226(2000).  
 RN (3)  
 RP SEQUENCE FROM N.A.  
 RA Kaiser P.;  
 RL Submitted (JAN-2003) to the EMBL/GenBank/DBJ databases.

DR EMBL; AJ109540; CRC40812.1; -;  
 DR EMBL; AJ250838; CRC15566.2; -;  
 DR HSP; P05231; IALU.  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005125; F:cytokine activity; IEA.  
 DR GO; GO:0005138; F:interleukin-6 receptor binding; IEA.  
 DR GO; GO:0006955; P:immune response; IEA.

DR Pfam; PF00489; IL6; 1.  
 DR PRINTS; PR00433; IL6GCSFMGF.  
 DR PRINTS; PR00434; INTERLEUKIN\_6.  
 DR PRODOM; PD008388; GCSF\_MGF; 1.  
 DR PRODOM; PD004356; Interleukin\_6; 1.  
 DR SMART; SM00126; IL6; 1.  
 DR PROSITE; PS00254; INTERLEUKIN\_6; 1.  
 CC Glycoprotein; Growth factor; Signal.  
 CC SIGNAL; 1 47  
 CC CHAIN; 48 241  
 CC SEQUENCE; 241 AA; 26790 MW; 657F8049F25BD2F8 CRC64;

Query Match 12.3%; Score 111; DB 2; Length 241;  
 Best Local Similarity 22.2%; Pred. No. 0.055;  
 Matches 46; Conservative 35; Mismatches 74; Indels 52; Gaps 7;

QY 4 LGPSSLP-----QSFLKCLEBVRKIQGGALQELCATYKLCHEBEVLVGHSGIGTMAPLSSCPQALQ 44  
 DB 41 LPPAAVPLPAAADSSGCVGLERAGARALDCEPLAVLRRAVOLQDEKRTVCE 100  
 QY 45 PEEVLVLGHSLGIPMAPLSSCPQALQAG-----CLSGHSLGLFLYQGLQALBSIGSP 99  
 DB 101 NSMENVLRNNLNP-----KYTEEDGLGLGFPDEKCLTGLSSGLPFAFYLERIQTDFDS 156  
 QY 100 LGFTLDTLQLDVADPATTYWOQMEELGMAPALDPTQGAMPAPASAFORRAGVTV 153  
 DB 157 EKQNVESLCYSTGHLLAATIRQWV-----INPDEVIP--DSAAQKSLANTKSDKQW 206  
 QY 154 ---VASHL-----QSFLVSVYRLRLH 172  
 DB 207 IEKTMHLIRDTSPMEKTVRAVRYL 233

RESULT 14

Q8M75 PRELIMINARY; PRT; 212 AA.

ID Q8M75

AC Q8M75

DT 01-OCT-2002 (TRENBLrel. 22, Created)

DT 01-OCT-2002 (TRENBLrel. 22, Last sequence update)

DT 01-MAR-2004 (TRENBLrel. 26, Last annotation update)

DE IL-6.

OS Sue scrofa (Pg).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Suidae; Suidae; Suidae;

OC NCI\_TaxID=9823;

OX NCI\_TaxID=9823;

RP SEQUENCE FROM N.A.

RA Lee D., Yoo H., Choi I.;

RL Submitted (JUN-2002) to the EMBL/Genbank/DBJ databases.

DR EMBL; AF518322; NAM74938.1; --

DR HSSP; P05231; IAUU.

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005125; F:Cytokine activity; IEA.

DR GO; GO:0005138; F:Interleukin-6 receptor binding; IEA.

DR GO; GO:0006955; P:Immune response; IEA.

DR InterPro; IPR009079; 4\_helix\_cytokine.

DR InterPro; IPR003573; IL6\_MGF\_GCSF.

DR InterPro; IPR003574; Interleukin\_6.

DR Pfam; PF00489; IL6; 1.

DR PRINTS; PR00433; IL6GCSFMGF.

DR PRINTS; PR00434; INTERLEUKIN6.

DR ProDom; PD004356; Interleukin\_6; 1.

DR SMART; SM00126; IL6; 1.

DR PROSITE; PS00254; INTERLEUKIN\_6; 1.

SQ SEQUENCE 212 AA; 23881 MW; 1F540E7030BCFD77 CRC64;

Query Match 12.3%; Score 110.5; DB 2; Length 212;

Best Local Similarity 23.3%; Pred. No. 0.053; Mismatches 85; Indels 5; Gaps 3;

Matches 37; Conservative 32;

QY 17 KCLEVRKIQSGDALQEKLCATYKLCHEPELVYLGHSLGIP-WAPLSSCPQALQLAGC 75

DB 52 KTEBEIKITLIGKISMRBEMCKEYKCKENSKVLAENNLNLPKMAEKDGCFOGFGNOETC 111

QY 76 LSQLHSGFLYQGLQALBGISPELGPPTLDLQDVADPATTIWOQMEELGNAPALQPT- 134

DB 112 LMRITTVGLVERQYLDYLOQYEGDGSIEAVQISIKALAQILROKXKPDVETTPPTNASLM 171

QY 135 -QGAMPAPAS--AFORRAGCVLVASHLOSFLVSRYVLR 170

DB 172 NAGLLDKLQSQENWKNKTKIILIRSLDFLOFSIRAIR 210

RESULT 15

Q9XT80 PRELIMINARY; PRT; 208 AA.

ID Q9XT80

AC Q9XT80

DT 01-NOV-1999 (TRENBLrel. 12, Created)

DT 01-NOV-1999 (TRENBLrel. 12, Last sequence update)

DT 01-MAR-2004 (TRENBLrel. 26, Last annotation update)

DE Interleukin 6.

OS Delphinapterus leucas (Beluga whale).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti;

OC Monodontidae; Delphinapterus.

OC NCI\_TaxID=9749;

OX NCI\_TaxID=9749;

RP SEQUENCE FROM N.A.

RA MEDLINE=20141864; PubMed=10678396; DOI=10.1016/S0165-2427(99)00150-6;

RT "Molecular cloning, phylogenetic analysis and expression of beluga

RT whale (Delphinapterus leucas) interleukin 6.";

RL EMBL; AF076643; AAD42928.1; --

DR HSSP; P05231; IAUU.

DR GO; GO:0005576; C:extracellular; IEA.

DR GO; GO:0005125; F:Cytokine activity; IEA.

DR GO; GO:0005138; F:Interleukin-6 receptor binding; IEA.

DR GO; GO:0006955; P:Immune response; IEA.

DR InterPro; IPR009079; 4\_helix\_cytokine.

DR InterPro; IPR003573; IL6\_MGF\_GCSF.

DR InterPro; IPR003574; Interleukin\_6.

DR Pfam; PF00489; IL6; 1.

DR PRINTS; PR00433; IL6GCSFMGF.

DR PRINTS; PR00434; INTERLEUKIN6.

DR ProDom; PD004356; Interleukin\_6; 1.

DR SMART; SM00126; IL6; 1.

DR PROSITE; PS00254; INTERLEUKIN\_6; 1.

SQ SEQUENCE 208 AA; 23456 MW; 81CC85C6E80389C4 CRC64;

Query Match 12.0%; Score 108; DB 2; Length 208;

Best Local Similarity 21.3%; Pred. No. 0.088; Mismatches 81; Indels 6; Gaps 2;

Matches 33; Conservative 35;

QY 22 VRKIQDGALQEKLCATYKLCHEPELVYLGHSLGIP-WAPLSSCPQALQLAGC 80

DB 52 IKYIIGKISMRBEMCKEYKCKENSKVLAENNLNLPKMAEKDGCFOGFGNOETC 111

QY 81 SGLFLYQGLQALBGISPELGPPTLDLQDVADPATTIWOQMEELGNAPALQPTGA-- 137

DB 112 TGLLEYQYLDYLOQYEGDGSIEAVQISIKALAQILROKXKPDVETTPPTNASLM 171

QY 138 --MPAFASAFORRAGCVLVASHLOSFLVSRYVLR 170

DB 172 NNLOSQNDMMNNTKTIILIRSLDFLOFSIRAIR 206

Search completed: July 9, 2005, 12:39:03

Job time : 112.318 secs